SLEEP AND SLEEPLESSNESS

H. ADDINGTON BRUCE

SLEEP AND SLEEPLESSNESS

MIND AND HEALTH SERIES

Edited by H. Addington Bruce, A.M.

SLEEP AND SLEEPLESSNESS

BY

H. ADDINGTON BRUCE

AUTHOR OF "SCIENTIFIC MENTAL HEALING,"
"THE RIDDLE OF PERSONALITY," ETC.

BOSTON
LITTLE, BROWN, AND COMPANY
1915

Copyright, 1915,
BY LITTLE, BROWN, AND COMPANY.

All rights reserved

Published, May, 1915
Reprinted, November, 1915

Set up and electrotyped by J. S. Cushing Co., Norwood, Mass., U.S.A.
Presswork by S. J. Parkhill & Co., Boston, Mass., U.S.A.

1946

613.79
B88

PREFACE

A STUDY of sleep falls naturally and inevitably into the scheme of the present series of handbooks, the purpose of which is to extend knowledge of the important discoveries affecting individual and social welfare that have been made during recent years through psychological investigation. Perhaps in no respect have the labors of modern psychologists — and particularly of medical psychologists — been more fruitful than in the light they have thrown on the phenomena of sleep. The nature of sleep itself has for the first time been experimentally as well as clinically studied, with results of great practical significance. The causes of sleeplessness have likewise been investigated more carefully than ever before, and discoveries

made that bring new hope to the victim of insomnia. As later stated, evidence is now available indicating that almost all insomnia is curable, and curable without recourse to drugs.

So, too, those common disorders of sleep — nightmare and somnambulism — have been scrutinized anew, and important conclusions reached as to their nature, causation, and proper treatment. No less exhaustive and painstaking have been the researches of the modern psychologists with regard to the general problem of the state of the mind in sleep, one result being the gaining of unexpected insight into the true significance of dreams. On the one hand they have been found to be, not mere haphazard products of the imagination, but mental images mirroring the inner life of the dreamer; and, on the other hand, scientific study of them has revealed unsuspected mental processes and powers as part of the common possession of mankind.

It has been my effort to present the results of all this varied investigation as compactly and clearly as possible; and in especial to make the presentation of practical helpfulness to the reader. To none of us are sleep and its phenomena of merely academic interest; they press upon us urgently, and the better we understand them the happier, healthier, and more efficient lives we can lead.

H. ADDINGTON BRUCE.

CAMBRIDGE, MASSACHUSETTS,
March, 1915.

CONTENTS

CHAPTER		PAGE
	PREFACE	v
I.	WHY WE SLEEP	1
II.	THE MIND IN SLEEP	37
III.	DREAMS AND THE SUPERNATURAL	66
IV.	DISORDERS OF SLEEP	114
V.	THE CAUSES OF SLEEPLESSNESS	146
VI.	THE TREATMENT OF SLEEPLESSNESS	178
	INDEX	217

SLEEP AND SLEEPLESSNESS

Chapter I

Why We Sleep

SLEEP has long been regarded as one of the most baffling of the many knotty problems that science has been called upon to solve. The scientist, of course, in common with the layman, has always recognized and appreciated its essentially beneficent character, so happily expressed in the words of the immortal Sancho Panza, "Blessings on him who invented sleep! — the mantle that covers all human thoughts; the food that appeases hunger; the drink that quenches thirst; the fire that warms; the cold that moderates heat; and, lastly, the general coin that purchases all things;

the balance and weight that make the shepherd equal to the king and the simple to the wise." But, while recognizing the kindly and restorative rôle played by sleep in the scheme of animate existence, the scientist almost as much as the layman, until lately at all events, has been in the dark with respect to its nature and mechanism. Even the conditions that determine its production have been but vaguely and partially understood, with the result, as every doctor knows, that sleeplessness still constitutes a great stumbling-block in medical practice.

Science, in fact, has quite generally been content with describing the phenomena of sleep, as one may readily ascertain by examining the now voluminous literature on the subject. Even when explanations have been attempted, they have usually resolved themselves into descriptions of states that accompany sleep rather than demonstrations of the factors that

cause it. Thus, the investigations carried on by Durham, Hammond, Howell, Mosso, and others, alleged to prove that cerebral anæmia, or deficiency of blood in the brain, is the great cause of sleep, really prove nothing more than that certain circulatory changes take place during sleep. Or if the theories advanced are truly explanatory — as is the case with the chemical and pathological theories which attribute sleep to a poisoning of the system by toxic substances that accumulate in the blood — they suffer from the serious objection that sleep often occurs under conditions in which the factors stressed cannot reasonably be assumed to have a part. Small wonder, therefore, that many writers have ventured on nothing more than an elaboration of the obvious, like Marie de Manacéïne, the Russian authority, whose theory of sleep is summed up in the distinctly non-explanatory phrase: "Sleep is the resting-time of consciousness."

Recently, however, a decided advance has unquestionably been made in our understanding of this fundamental fact in the life both of man and of the lower animals. It is an advance due in part to the progress of biological and physiological research, but even more due to the extraordinary development of that youngest of the sciences, psychology, which in the past few years has made so many important contributions to the fund of human knowledge. Not a few of these, it is worth noting, have wholly or partly originated from the increased attention that the modern psychologist has paid to the realm of sleep.

Our present appreciation of the marvelous extent to which one's intellect, one's character, and even one's health are affected by "subconscious" emotions and memories; our appreciation of the formative influence of the most trivial details in one's environment, and of the possibility of adjusting the environment in such a way as to make

unfailingly for physical, mental, and moral upbuilding; our fuller comprehension of the principles that underlie and give validity to scientific "psychotherapy," or healing by suggestion, of which the medical fraternity is beginning to make systematic and effective use — all this has been largely due to recent psychological study of the phenomena that occur either in ordinary, "natural" sleep, or in those allied sleeping states induced by drugs or hypnotic procedures. Naturally enough, from studying the phenomena of sleep, the investigators have been led to study sleep itself, with results which, if they do not altogether dispel its mystery, have at least afforded clearer insight than ever before into its nature, significance, and causal conditions — matters of considerable practical as well as theoretical importance, particularly in this age of stress and strain with its imperative demand for the most efficient utilization of human resources, and its

equally inexorable tax on the human organism.

The great difficulty has always been to formulate an explanatory hypothesis which — excluding the various types of pseudo-sleep that manifestly result from abnormal conditions — would adequately account for the many strange anomalies presented by sleep. Any hypothesis to be satisfactory has to explain, for example, why sleep predominates over waking life in the case of the very young, why it has a smaller share in middle life, and why it tends in old age to become dominant once more, or, with no ill effects, to be even less in evidence than in the years of greatest virility. Any sound theory has to explain the seeming paradox between the periodical onset of sleep after exertion and its frequent withdrawal when the exertion has been at all excessive. It has also to explain the well-established fact that the amount of sleep required is by no means proportionate to

Judge ... Library
Salt Lake ... Trial

the amount of intellectual or muscular effort previously expended, so that we often find men of intense mental or physical activity — for instance, Napoleon, Frederick the Great, Schiller, Humboldt, Mirabeau, the English surgeon John Hunter, and our own Thomas A. Edison — getting along very well with four or five hours' sleep a night, as compared with the eight or nine hours of less energetic individuals. Then, too, there is the familiar and most embarrassing occurrence of sleep in public places — the church, the theater, the opera-house — on the part of persons suffering neither from fatigue nor from any interruption to their regular night's rest; and, opposed to this, the chronic wakefulness of the insomniac in the dark and quiet of his home, utterly worn out yet unable to sleep.

These are only a few of the puzzling phases that have to be accounted for, and that have combined to baffle until now all

efforts at a consistent and comprehensive explanation of sleep. But with the development of modern psychology, and, above all, with the increased appreciation it has enforced of the preponderating influence of the psychical factor in all aspects of human existence, real progress towards such an explanation has, as was said, been made. It is now known that sleep, contrary to the belief formerly so widely entertained, is no mere passive, negative state, the product of toxic or other harmful elements, but is an active, positive function, a protective instinct of gradual evolution and dependent for its operation partly on the will and partly on the environment. It is the result of a certain reaction between the central nervous system and the stimuli impinging on it, its object being not so much the recuperation of the organism from the effects of the activities of the intervening period of waking life, as to save the organism from the destructive conse-

quences of uninterrupted activity. Or as one investigator, Doctor Boris Sidis, the well-known American medical psychologist, affirms:

"Sleep is not a disease, not a pathological process due to the accumulation of toxic products in the brain or in the system generally. Sleep is not an abnormal condition; it is a normal state. Like the waking states, sleep states are part and parcel of the life-existence of the individual. Waking and sleeping are intimately related — they are two different manifestations of one and the same life-process — one is as normal and healthy as the other. One cannot help agreeing with Claperède's biological view that sleep is a positive function of the organism, that sleep belongs to the fundamental instincts. As Claperède forcibly puts it:

"'Sleep is a protective function, an instinct having for end, in striking the animal with inertia, to prevent it from arriving at

a condition of exhaustion. We sleep, not because we are poisoned or exhausted, but so that we shall be neither poisoned nor exhausted.'"[1]

In order for sleep to function, however, sundry requirements must be complied with, and it is not the least important outcome of the recent researches that, by the two-fold method of experiment and observation, they have pretty definitely established just what these requirements are. Especially noteworthy in this connection is the experimental work carried on by Doctor Sidis, and leading him to the conclusion just quoted.

His study of sleep was a direct outgrowth of his labors in medical psychology, since it had as its starting-point the discovery that an ingenious technique he had devised for putting nervous patients into a "dissociated" state as a preliminary to psychotherapeutic treatment, had the

[1] "An Experimental Study of Sleep," p. 88.

further effect, when prolonged, of causing them to fall asleep. This technique, which he calls hypnoidization, and which is something quite distinct from hypnotism, may best be described in his own words:

"The patient is asked to close his eyes and keep as quiet as possible, without, however, making any special effort to put himself in such a state. He is then asked to attend to some stimulus, such as reading or singing, or to the monotonous beats of a metronome. Or he may be asked to fixate his attention on some object, while at the same time listening to the beats of the metronome. His eyes are then closed, he is to keep very quiet, while the metronome or some other monotonous stimulus is continued. After some time, when his respiration and pulse are found somewhat lowered, he is asked to concentrate his attention on a subject closely relating to the symptoms of his malady. In other words, the patient is in a hypnoidal state,

favorable to the emergence of subconscious memories." [1]

Now, observing that the state thus induced was not only exceedingly unstable and transitory, but tended to result in a more or less profound sleep, Doctor Sidis conjectured that it might be identical with the "borderland" state through which it has long been known that people always pass when falling asleep. If this were the case, it could logically be inferred that the conditions essential to the causation of the hypnoidal state as outlined in the passage just quoted — that is to say, fixation followed by relaxation of the attention, limitation of voluntary movement, limitation of consciousness, and monotonous stimulation — were precisely the conditions operant in the production of sleep. His scientific curiosity and interest aroused, Doctor Sidis now began, in his own labora-

[1] "Studies in Psychopathology," in the *Boston Medical and Surgical Journal*, March and April, 1907.

tory and in the laboratory of the Harvard Medical School, a long series of experiments on different animals — frogs, guineapigs, cats, and dogs — and on children of a few days to several years old, applying to each as far as was possible the conditions he had found favorable for the bringing about of the hypnoidal state in adult men and women.

In every case he discovered that when he limited the sensory impressions by closing the eyes, inhibiting voluntary movements, and applying a monotonous stimulus — such as a gentle stroking of the subject's body — there resulted a state closely analogous to the hypnoidal condition, and followed by a state of sleep. A quotation from Doctor Sidis's detailed account of his experiments with some puppies will give an idea of the methods employed by him and the results obtained in the case of animals:

"Two puppies of about two months old; very lively, excitable, and barking vio-

lently. After some struggle each one was wrapped in a cloth so that even the fore-paws did not protude. At first they were greatly excited by the proceeding, and proclaimed their indignation by loud yelping. I took my turn with each one separately. The puppy was held down firmly and given no chance to move its body or to struggle with its paws. I also closed the puppy's eyes with my fingers. The puppy struggled and wriggled under my hand, but I held on tightly.

"Gradually the puppy ceased its struggles and became very quiet. Respiration became slow and regular. I gradually released my grip on the dog, when I found that its eyes were firmly closed. The puppy was fast asleep.

"The same performance was carried out in the case of the other puppy. After five minutes, during which time I held the dog tightly and kept all the extremities in close grip, the puppy passed into a quiet

state and fell asleep as the first one did. Respiration was slow and uniform. Both puppies slept peacefully. There was no response to external stimuli. Limbs were in a state of relaxation. In spite of the noise in the neighboring room the puppies kept on sleeping. After twenty minutes one of the puppies woke up, made some show of struggle, but the eyes remained shut and he fell asleep again. I tried to loosen the cloth in which the puppies lay enwrapped. My manipulations did not disturb their sleep. . . .

"Three new puppies were very tractable. They fell asleep with the greatest ease imaginable. The puppies were about two and a half weeks old, were quite gentle and showed almost no resistance. The same phenomena were present as in the other dogs; they went to sleep under the same conditions, their paws for a brief period of a few seconds were extended and slightly resistive. Limbs retained the position

given to them. The eyelids were firmly shut and there was resistance to attempts to force them open. When forced open the eyeballs were rolled up, and the eyelids closed as soon as they were let go. The puppies seemed to possess the power of sleeping indefinitely. Now and then sucking and snapping movements were observed. They slept for more than an hour, and would have gone on sleeping had they not been rudely shaken out of their peaceful repose.

"The experiments were repeated with the same results. As the puppies got older the manifestations of the transient, intermediate state became more pronounced — catalepsy was more evident on falling asleep. The same held true in the case of waking up. There was a slight stiffness and catalepsy of the paws for a brief period when the puppy emerged from sleep. On falling asleep the puppies did not tumble at once into that state, they opened and shut their eyes, when my fingers were

Judge Me... ...ary
Salt Lake City, Utah

released from pressing their eyelids. They kept on blinking the eyes. The lids came nearer together and finally closed. The same process of blinking was observed on waking; they seemed to wake and fall asleep again, thus being really in the intermediary, hypnoidal state, hovering between waking state and sleep, both on going to and coming out of sleep. . . .

"I may add that I also carried out similar experiments on a dog of six months old. As the dog was used to me I had no difficulty in inducing sleep. I made him keep quiet and then closed his eyes firmly. He went to sleep. When I tried to open his eyes they resisted. When I opened them I found the eyeballs rolled up, nictitating membrane over part of sclera, and pupils were contracted. There were present the same manifestations of hypnoidal states, the slight catalepsy on falling asleep and a similar, though somewhat slighter, catalepsy on awaking. There was

little difficulty in putting the dog to sleep. With the repetition of the experiments it was easier to put him into hypnoidal states and sleep under the conditions of monotony, limitation of voluntary movements, and inhibition. The dog was very lively otherwise, but when put under the conditions of monotony and limitation of voluntary activity, he sank into a passive state and then into a state of sleep."[1]

In the case of the children with whom Doctor Sidis experimented, he discovered that, as compared with adults, they reacted far more readily to his methods for bringing on sleep, and this he saw reason to attribute to the inferiority of their mental development.

"This ease of induction of sleep," is the way he explains it, "is furthered by the comparatively small amount of variability of conscious activity present in the child — the variability of mental content being an

[1] "An Experimental Study of Sleep," pp. 40–53.

important factor in keeping up the freshness, continuity, and qualitative intensity of consciousness. Now, as the child depends entirely for the variability of its consciousness on muscular activity and external impressions, we can well realize that when those sources become limited and monotonous the child falls under the influence of all the important conditions requisite for the induction of sleep. The child, in short, has no inner wealth of mental life to fall upon; it has little if any inner resources; that is why it falls an easy prey to sleep when the external resources lose their variability, become uniform and monotonous."[1]

The longer he experimented, the stronger became Doctor Sidis's conviction that in monotony we have the central fact in the causation of sleep. When we sleep, we do so because our consciousness is no longer stimulated by a sufficient variety of sensa-

[1] "An Experimental Study of Sleep," p. 55.

tions to keep us in a waking state. The variety, for that matter, may actually be present. But sensation-strain has fatigued our attention; for us, variety itself has temporarily become monotonous, and we fall asleep. Or if, when our customary sleeping-time arrives, we nevertheless find ourselves in an alert state, but feel that we ought to go to sleep, we proceed to put ourselves to sleep by a process that instinctively duplicates the conditions of experimental hypnoidization. That is, we undress and recline in bed, thereby markedly limiting our voluntary movements; we extinguish the light and close our eyes, limiting the sensorial field and producing the monotonous stimulation of darkness; we relax our attention, and presently we fall asleep.

Much the same view, which obviously makes sleep chiefly dependent on the character of the stimuli received by the consciousness, is maintained by other recent experimental students of the subject,

especially the European scientists Verworn and Huebel. On the other hand, it has been sharply criticised by at least one investigator, another medical psychologist, Doctor I. H. Coriat, whose own experiments[1] have led him to the conclusion that the main factor in the induction of sleep is the influence, not of monotonous stimuli, but of muscular relaxation. "When we relax, the motor phenomena become lessened, and this tends to produce drowsiness and finally sleep, due to a diminution of peripheral stimuli from the muscles to the brain, produced by the act of muscular relaxation." Doctor Coriat admits, however, that the muscular relaxation itself may result from a relaxation of the attention, and thus he still leaves the way open for the application of the monotony theory as explanatory of the sleeping state.

Moreover, it is possible to cite many in-

[1] Reported by Doctor Coriat in *The Journal of Abnormal Psychology*, vol. VI, pp. 329–367.

stances of sleep occurring under conditions of muscular tension, as in the case of travelers falling asleep on horseback, and soldiers on the march, without any diminution of their ability to ride and walk, carry their rifles in the proper position, keep in step, etc. W. A. Hammond, one of the earlier scientific investigators of sleep, testifies that he himself often slept on horseback, and specifically calls attention to the phenomenon of sleeping pedestrianism as exhibited by Galen and the Abbé Richard, the latter of whom "states that once when coming from the country, alone and on foot, sleep overtook him when he was more than half a league from town. He continued to walk, however, though soundly asleep, over an uneven and crooked road." Galen similarly walked more than two hundred yards while in a deep sleep, and "would probably have gone further but for the fact of his striking his foot against a stone and thus awaking."

Occurrences like these would be impossible if muscular relaxation really were fundamental to sleep. But they are quite compatible with the monotony theory, which indeed has the merit of offering a more complete and convincing explanation for the various anomalies of sleep than does any other theory. It finds also striking corroboration in facts of every-day observation, as well as in occasional happenings of an extraordinary character, which both reinforce it and are themselves difficult of explanation without resort to it.

Take, for example, the application of the theory to explain the somnolence of infancy by stressing the feebleness of intellectual development in the very young child and the consequent lack of diversity of its interests. The explanation hitherto usually advanced for this is that children sleep more than adults because they need more sleep as compensation for the strain of the growth process. If this were so it

would follow that with the attainment of organic growth there would always be an appreciable diminution of the sleeping-time. But the fact actually is that certain types of adults — and these invariably persons of inferior intellectual development — tend, like children, to spend much of their lives in sleep.

Such is the case with idiots and imbeciles, and it is also the case with savages, who, as was long ago pointed out by Dugald Stewart, have a habit of falling asleep when their minds are unoccupied. So, too, that shrewd philosopher-statesman, Jefferson, recorded in his "Notes on Virginia," "The existence of the Negro slaves in America appears to participate more of sensation than reflection. To this must be ascribed their disposition to sleep when abstracted from their diversions and unemployed in their labor." In this connection should be cited also the experience of the unfortunate youth, Caspar Hauser, whose

pathetic career has deservedly and for more than one reason been often made the subject of scientific discussion.

Caspar Hauser, to recall the facts as briefly as possible, was an unhappy German lad, kept prisoner in a dungeon from early childhood, in absolute solitude, and without so much as a glimpse of men, animals, the sky, the sun, the moon, the stars, or any other object in the external world. In 1828, at the age of seventeen or eighteen, he was taken from his place of confinement and turned adrift in the streets of Nuremberg. The charitable persons who took charge of him soon discovered that his mental state was little more advanced than that of a few-months-old baby, and that, like a baby, he easily and frequently fell asleep. It seemed impossible for him to remain awake after sunset, and in the daytime to take him outdoors was enough to plunge him into a deep sleep, even in a roughly jolting vehicle. Says one of his

teachers, writing some months after his mysterious appearance in Nuremberg:

"Caspar sinks, even yet, whenever he rides in a carriage or a wagon, into a kind of death sleep, from which he does not easily awake, whether the vehicle stops or rolls on; and in this state, how roughly soever it may be done, he may be lifted up or laid down and packed or unpacked without his having the least perception of it. When sleep has once laid hold of him, no noise, no sound, no report, no thunder, is loud enough to wake him."[1]

Here, clearly, is the case of a youth long past the age of infancy, and experiencing not at all the need of sleep as an aid to bodily growth, yet sleeping as an infant sleeps. Only by assuming that both in his case and in that of the ordinary babe the determining factor is at bottom the paucity of the mental life, quickly rendering all stimuli monotonous by reason of in-

[1] Anselm von Feuerbach's "Caspar Hauser."

ability to differentiate and be intelligently interested in them, is it possible, it seems to me, to arrive at a satisfactory explanation.

In like manner the monotony theory enables us as nothing else does to understand the enormous variations in the time taken for sleep by adults of approximately similar physical constitutions. It surely is no mere coincidence that, as common observation shows, the men and women who habitually, and without untoward consequences, take a shorter night's rest than the majority of their fellows, are men and women of unusual intellectual keenness and a wide range of interests. Such people are seldom "bored"; they find food for thought and entertainment in everything; they are alive in every way. Typical in this connection is the case of Rudolf Virchow, as narrated by Doctor James J. Walsh, who undoubtedly gives it the correct explanation:

"For more than a year I lived close to the great German pathologist Virchow, and found that his varied interests were probably the secret of his power to devote himself to work for many hours a day, take only a small amount of sleep, and yet live healthily and happily for over eighty years. Frequently he did not leave the Prussian Legislature until 1 A.M., or even later, and yet he seldom failed to be at his laboratory before 7 : 30 o'clock in the morning, though it was several miles from his home and took over half an hour to get there. Besides pathology he was deeply interested in anthropology and in most of the biological sciences, and his favorite hobby was the practical care of the health of the city of Berlin. From the time that Berlin, just after the Franco-Prussian War, began to grow out of the half-million provincial town that it was into the great world capital that it became, Virchow had charge of the health of the men engaged on the sewer

farms of the city. . . . His visits to the farms, his planning for the prevention of the spread of disease, his deep interest in the reports and the constant improvement of conditions, instead of hampering his other intellectual activity by wasting brain force, probably proved restful by diverting the blood stream away to the cells that occupied themselves with this other and very different problem, and so proved a benefit, not an evil."[1]

And, as Virchow's case further suggests, unless disease weakens their elasticity of mind, persons of keen and varied interests usually retain even in extreme old age, the ability to do with less sleep than other people. Whereas it is equally a commonplace of observation that persons of inferior intellectual activity or of a comparatively limited mental outlook, persons whose lives are cast in a dull routine, are as a rule inclined to indulge in exceptionally long

[1] "Psychotherapy," p. 226.

periods of sleep, like the proverbial farmer who "goes to bed with the hens." That they do so, it may safely be affirmed, is because the stimuli of their environment more readily become tedious and monotonous to them, and they sleep as a defense reaction against ennui.

All of which would suggest, of course, that most of us sleep longer than is really necessary. Personally I have no doubt that this is the case. It has been experimentally shown that, even following protracted vigils, a surprisingly small amount of sleep is needed to effect complete recuperation. In one particularly interesting set of experiments, made some years ago by Professor Patrick and Doctor Gilbert in the psychological laboratory of the University of Iowa, three members of the teaching staff were kept continuously awake for about ninety hours. Being then allowed to go to bed, they found it necessary to make up only from sixteen to thirty-five

per cent. of the time lost from sleep. Students of sleep are agreed, in fact, that it is the quality of sleep that counts rather than the amount, and that certain dangers, physical and mental, attend the development of an undue "sleep habit." To quote Marie de Manacéïne, who has given special attention to this aspect of the sleep problem:

"If a man sleeps longer than the repose of consciousness and the repair of the tissues require, there will, in the first place, be an enfeeblement of consciousness from lack of exercise; and, in the second place, an adaptation of the vessels to an abnormal state of the nutritive circulation, to the detriment of the functional circulation. Consequently we may have ground to apprehend trouble in the respiratory exchange and an over-production of carbonic acid — not a matter of indifference to the organism, which may sooner or later be injured thereby."[1]

[1] "Sleep," p. 158.

For these reasons Madame de Manacéïne strongly, and justly, deprecates the practice indulged in by too many nurses, and even mothers, of artificially prolonging the sleep of their children out of a selfish desire to have more time to themselves; and she approvingly recites the German saying, "He has been rocked into stupidity," as epigrammatically expressive of something more than a mere witticism. Nevertheless, if at every age of life it is important to guard against any tendency to excessive sleep, and if there is reason to believe that the majority of people sleep more than is actually necessary, it would be highly imprudent to advise any arbitrary shortening of the hours of sleep.

This can safely be achieved only through the gradual process of consciously or unconsciously habituating the mind to act more vigorously and expansively — a process which seems to have the dual effect of prolonging the waking period and at

the same time of prolonging it without injury to the organism. No doubt this is partly due to an improvement in the quality of the sleep taken, but it must also be due in part to a positive strengthening of the constitution by an increased exercise of the mental powers, a view borne out by the interesting circumstance that the great thinkers of the world — the Spencers, Gladstones, and Franklins — have generally been long-lived, notwithstanding that in many cases they were of frail physique in youth.

But to develop a shorter sleep habit without basing it on an increase in mental development can only have disastrous effects, for the reason that an excessive strain will necessarily be imposed on a brain accustomed to function actively only so many hours each day. That is why, however true it may be to say that four or five hours' sleep should be enough for any man, most men at present require a much longer

sleeping-time, and will continue to require it until, with the progress of educational reforms, a maximal brain development shall happily become the rule, not the exception. Even then there must go apace with increase in mental activity an increased power of moral control — a power which will enable men to think hard but calmly, to meet the vicissitudes of life with fortitude, to withstand all incentives to impatience, anxiety, worry. Otherwise the greater activity of their minds will inevitably become a source of positive danger, by rendering them easy victims to that cerebral over-stimulation which leads not to too much sleep but to too little.

What, then, under present conditions, should be the sleeping-period for the average person? To this question, reply might well be made in the words of Madame de Manacéïne:

"During the first four or six weeks of life there ought to be two waking hours

during the day, and as the baby grows the duration of this period should gradually increase. Between the ages of one and two years, children need eighteen to sixteen hours of sleep out of the twenty-four; between two and three years, seventeen to fifteen hours; between three and four years, sixteen to fourteen hours; between four and six years, fifteen to thirteen hours; between six and nine years, twelve to ten hours; between nine and thirteen years, from ten to eight hours.

"At the critical age of puberty, during the transition from childhood to adolescence, the duration of sleep should be somewhat augmented. At the end of this period it may be reduced to from seven to nine hours; and only after the completion of growth, at the age of nineteen or twenty, can it be safely brought as low as six to eight hours a day. Those who have reached middle age, the age at which consciousness and the other psychic faculties

have attained the zenith of their development, may content themselves with even less, but only so long as they are in perfect health. On the whole, it may be said that eight hours is, on the average, the amount which adults may most wisely devote to sleep."

Chapter II

The Mind in Sleep

IT was a personal experience of a singular character that first impressed upon me, some years ago, the importance of dreams as a subject for serious investigation. Until then I had shared the opinion prevailing among laymen — and, it would seem, among most scientists also — that dreams are entirely fanciful and meaningless. But my experience was such that I could no longer believe this.

To state it briefly, it involved the recurrence of a most bizarre dream. At least twenty times during a period of six months I had the same dream — namely, that a cat was clawing at my throat. The stage setting and the minor incidents might vary, but always the central episode was

the same, and usually the fury of the dream cat's onset was so great that it would awaken me. Naturally, this recurrent dream puzzled me, so much so that I spoke about it. But, ascribing it to indigestion, and classifying it with ordinary nightmares, I did not let it worry me at all.

Then, one day, the accident of a heavy cold that settled in my throat led to a medical examination which, much to my surprise, revealed the presence of a growth requiring immediate treatment by the surgeon's knife. Some time afterward it suddenly occurred to me that since the removal of the dangerous growth I had not once been troubled by the cat-clawing dream. Its significance now began to dawn on me.

I had suffered no pain, not even inconvenience, from the growth in my throat. In fact, I had not consciously been aware of its presence. But unquestionably the organic changes accompanying it had given rise to sensations which, slight though they

were, had made an impression on my sleeping consciousness sufficient to excite it to activity. My recurrent dream consequently was to be regarded as a symbolic representation of the disorder in my throat — an attempt to interpret it, to explain it. And indeed, even in the dream, for all its fantastic imagery and symbolism, the seat of the trouble was indicated plainly enough, as I could appreciate after the surgeon had completed his labors.

The possibility at once suggested itself that, after all, dreaming might not be such an irrational process as I had hitherto supposed it; and, further, that from both a theoretical and a practical point of view the state of the mind in sleep might well repay examination. It seemed certain, judging from my own experience, that some dreams, at all events, had a meaning; and my astonishment was great, when I began to explore the literature on the subject, to discover how little had been

done in the way of systematic inquiry. A great many facts and observations had been assembled, but with scarcely any attempt to collate them and ascertain the laws of dreaming. This, fortunately, is less the case to-day; the researches of such psychologists as Sigmund Freud, Morton Prince, Pierre Janet, and Havelock Ellis having of late considerably advanced our knowledge, and having conclusively demonstrated that the world of dreams, quite as much as the world of waking life, is a world of order in which things do not happen by chance.

Superficially, of course, it often is a topsyturvy world, places, persons, and events being jumbled together in amazing defiance of the laws of nature. The incongruities of that classic dream-story "Alice in Wonderland," or the late W. S. Gilbert's grotesque but fascinating dream-recitative, the Lord Chancellor's song in "Iolanthe," are paralleled every night by

the incongruities of actual dream experiences. Probably this fact, more than anything else, is responsible for the prevailing contempt for dreams and belief in their irrationality.

In reality, there is reason in the most "nonsensical" of dreams, as can always be shown if one takes the trouble to analyze them. Indeed, as Havelock Ellis has remarked, it may almost be said that we use our reasoning powers more when we dream than when we are awake, for the endless and rapid succession of images and ideas that assails us in dreams is nothing but a process of reasoning, a determined effort "to argue out harmoniously the absurdly limited and incongruous data present to sleeping consciousness."[1]

The difficulty is that, although we can reason in dreams, we cannot, except to a slight extent, utilize the critical faculty which in the waking state renders our

[1] "The World of Dreams," p. 56.

reasoning effective. Our judgment is, as it were, temporarily atrophied, while our tendency to reason is hypertrophied as a result of our greater sensitiveness to all sorts of internal and external impressions. In sleep, as illustrated by my cat-clawing dream, we feel the need of explaining matters to which, awake, we should be quite indifferent, or which we should instantly understand through the aid of our sense organs. Lacking free and co-operative use of these, we are compelled to construct a satisfactory explanation by the exercise of imagination, a process greatly furthered by the fact that in sleep the sensations which reach us, being cut off and isolated from the flood of sensations that compete for our attention when we are awake, seem far more massive and intense than ordinarily.

Thus it comes about that, as was long since demonstrated by repeated experiment, the slightest pin-prick, the mere

exposure of finger or toe to a feeble current of air, may occasion most complicated and terrifying dreams. Besides which, in working out its explanation, the sleeping consciousness does so with a rapidity greatly exceeding that of conscious thought. This statement, I am aware, is disputed by at least one of the principal modern authorities, on the ground that "in all the cases in which the rapidity of the dream process has seemed so extraordinary it has merely been a question of visual imagery, and it is obviously quite easy to see in an instant an elaborate picture or series of pictures which it would take a long time to describe." But it frequently is more than a matter of visual imagery. Conversations are introduced, there is action by the dream personages. And, in any event, when one is awake it is by no means "obviously quite easy to see in an instant an elaborate picture or series of pictures." On the contrary, it takes an appreciable

length of time to see even the outstanding details of a small picture in anything like the fullness and vividness with which dream images are seen.

As emphasizing its extreme rapidity there is, too, this peculiarity in the dream process, that in many instances it completes its images and ideas before it begins to present them to the dreamer. That is to say, it works out its story backwards, beginning with the climax and passing from incident through incident to the starting-point at which it first enters consciousness as a dream. This is well illustrated by an experience reported by Alfred Maury, one of the earliest scientific investigators of the phenomena of sleep, who dreamed that he was living in Paris during the Terror, and had been put on the proscribed list. After many exciting adventures, he was captured, tried, and sentenced to execution. He saw himself dragged through the streets amid a clamoring multitude and forced to

mount the scaffold and bare his neck to the fatal blow. In that instant, as the guillotine knife descended, he woke to find that a piece of the cornice of his bed had fallen and struck him on the neck.

Testifying even more impressively to the twofold action of the dream process and to its rapidity is a dream experience of my own. In this dream I was walking alone, at night, along a country road. It was lined on both sides by trees which, as I learned from a man who presently joined me, were heavily laden with fruit. I picked some pears and ate them as we walked and talked. The road seemed to overlook a broad valley, in which, at perhaps half a mile's distance, I saw a solitary light. My companion told me that it was in his home, and invited me to pass the night with him. After a tiring walk in the dark across meadows, we reached the house, a small two-room cabin. He retired into the inner room, I went to bed in the outer. I

had not been long asleep when, in my dream, I was awakened by the noise of somebody running, and the thought instantly flashed into my mind that my host was making off with my money. I leaped up shouting: "Stop! stop!"

Then I really awoke, and as I did so distinctly heard on the pavement below my window the sound of hurried footfalls and a voice crying excitedly: "Stop! stop!" At once it was clear that these two words, penetrating to my sleeping consciousness, had provided the necessary stimulus to set up a dream process which, in the fraction of a second, had interpreted them as best it could and had presented the results of its interpretation in the form of a curious little narrative of nocturnal adventure.

More frequently, however, I believe it is safe to say, the dream excitant is connected directly with the state of the sleeper's physical organism. Mention has already

been made of the experimental demonstration of the ease with which dreams may be produced by the use of artificial irritants. One sleeper, whose nose was lightly tickled with a feather, had a horrible dream of a mask of pitch being alternately applied to and drawn violently from his face. Another, at whose feet a hot-water bag was placed, dreamed that he was walking over hot lava. In a second experiment of the same sort, the accidental slipping of the cover from the hot-water bag led to an elaborate dream of capture and torture by Rocky Mountain bandits, who insisted that the dreamer knew how to convert copper into gold, and held his naked feet in a fire in order to compel him to communicate his valuable secret. Similarly, the application of a slight degree of heat to the feet of a patient with paralyzed limbs was followed by a dream of being transformed into a bear and taught to dance by being placed on red-hot iron plates.

One's position in bed, the state of one's digestion, the quantity of one's bed-clothing — all these play a part in the development of dreams, especially "nightmares" and the common dreams of falling, flying, going about in scanty attire, etc. Concerning such dreams I cannot say much from personal experience. To the best of my recollection I have never had — unless it were subconsciously — either the flying, or the falling dream, and only once the dream of appearing in public in garb better suited to the bedchamber. But most people do have them, and there would seem to be no doubt that they have a common origin in physical conditions.

The falling dream, for example, is doubtless attributable, as is popularly believed, to some slight gastric disturbance affecting the heart's action. As to the flying dream, the most reasonable theory, it seems to me, is one recently advanced by Havelock Ellis on the strength of a picturesque dream

in which, instead of the dreamer flying himself, as is usual, he saw another person flying.

"I dreamed," Mr. Ellis reports, "that I was watching a girl acrobat, in appropriate costume, who was rhythmically rising to a great height in the air and then falling, without touching the floor, though each time she appeared quite close to it. At last she ceased, exhausted and perspiring, and I had to lead her away. Her movements were not controlled by mechanism, and apparently I did not regard mechanism as necessary. It was a vivid dream, and I awoke with a distinct sense of oppression in the chest.

"In trying to account for this dream, . . . it occurred to me that probably I had here the key to a great group of dreams. The rhythmic rising and falling of the acrobat was simply the objectivation of the rhythmic rising and falling of my own respiratory muscles — in some dreams per-

haps of the systole and diastole of the heart's muscles — under the influence of some slight and unknown physical oppression. . . . There is, moreover, another element entering into the problem of nocturnal aviation: the state of the skin sensations. Respiratory activity alone would scarcely suffice to produce the imagery of flight if sensations of tactile pressure remained to suggest contact with the earth. In dreams, however, the sense of movement suggested by respiratory activity is unaccompanied by the tactile pressure produced by boots or the contact of the ground with the soles of the feet."[1]

It is not to be supposed that these common dreams of falling, flying, and the like are constant in their details. Everybody who has experienced them knows that their setting and incidents are likely to be different in every dream. But their principal feature, the sensation of falling or

[1] "The World of Dreams," pp. 134–137.

CATHEDRAL HIGH SCHOOL
LIBRARY
SHELF No.
BOOK No.

flying, is always present in one form or another; and there often is present, as in the dream just cited, a strong element of symbolism. This element, again, is the most conspicuous feature in recurrent dreams stimulated, like my dream experience with the cat, by the organic changes involved in the development of some disease. Just how far this fact may be turned to advantage by medical science it is as yet impossible to say, for the investigation of this phase of dreaming is only fairly under way. I would add that, as a means of contributing to its progress, I should be glad to receive from any of my readers statements regarding the character and frequency of dreams that may have come to them immediately prior to an illness.

Certainly sufficient information has already been brought together to justify the assertion that several maladies of a slowly progressive nature — such as cancer, tuberculosis, some forms of heart disease, and

various nervous and mental maladies — sometimes manifest their presence, before the physical symptoms of disease appear, by the recurrence of symbolic dreams. Thus not a few persons suffering from heart disease have testified that before their ailment had developed so that they were really conscious of it, they had dreams of toiling and sweating up a high hill, or of seeing others climb great heights with much difficulty. Malignant disease of the stomach is known in some cases to have been ushered in by dreams of mice or other small animals gnawing at the abdomen. And, so far as concerns nervous and mental disorders, knowledge of the part played by dreams in their symptomatology is even to-day so far advanced that many neurologists and psychiatrists carefully analyze their patients' dreams as a help both in diagnosis and treatment.

Accordingly, without wishing to create undue feelings of alarm or to encourage

morbid introspection, I am strongly of the opinion that any one who experiences an often recurring dream which seems to localize in its action some organ of the body, will do well to consult a competent physician. No harm will be done if his examination discloses no malady, or one so slight as scarcely to require attention. Whereas great benefit must follow if, as a result of the dream's indication, the physician succeeds in detecting at an early and remediable stage some disease of real gravity.

Dreams, to repeat, in most cases, though I believe not all, represent nothing more than an effort on the part of the sleeping consciousness to interpret external or internal physical stimuli. But in saying this I would have it well understood that I do not mean to imply that we have here a sufficient explanation of dreams. We have still to account for their contents, a very different problem, and one that until the past few years has been ignored by

most students, who have thereby missed making some of the most important and practically helpful discoveries connected with the phenomena of dreaming. To say that the dream excitant, the physical stimulus, accounts for the dream itself is equivalent to saying that the crack of the starter's pistol accounts for the result of a boat race. Whence come the details with which a dream is crowded? Why does a similar stimulus frequently — nay, usually — provoke in one man a dream differing profoundly in its imagery from that which it provokes in another? What are the laws governing the selection and presentation of dream images in the interpretative process? Such are some of the questions yet to be answered, and the answers to them can be found only in the psychological, not the physiological, domain.

One fact which immediately obtrudes itself when we begin to study dreams from

the standpoint of their contents is the interesting circumstance that, nine times out of ten, they are woven out of and around waking experiences of the previous day; and, furthermore, that the experiences thus utilized for dream material are not, as a rule, those which have consciously impressed us most, but experiences so trivial that we have given them little thought. They are not, to be sure, utilized in precisely the form in which we originally experienced them. Rather, they reappear as suggestions giving direction and color and tone to the dream story. To the truth of this all who have analyzed their dreams and reported on them bear unanimous testimony.

To cite a few illustrative instances that will make my meaning perfectly clear, a lady who, in the course of the day, had admired a friend's baby and bought a codfish for dinner, dreamed that night of finding a live baby sewed up in a big fish.

Another lady, having business during the day partly in the hen-yard and partly in the garden, had a grotesque dream of breeding chickens by planting hens' heads. A college student, after attending a performance of "The Merchant of Venice," was tormented by a nightmare in which all his instructors imposed on him excessive tasks, the dream reaching a climax — and an awakening — when one of the largest members of the faculty, angered at his refusal to do the work assigned him, drew a huge knife and began to whet it on his boot in the manner of Shylock.

More elaborate, yet equally founded on trivial incidents of waking life, was the dream of a fourth sleeper. In his dream, which I cite on the authority of Professor Jastrow,[1] he was alone in a room with a corpse, a situation not at all to his liking. He started to leave, but was stopped by an elderly woman, who shut and locked the

[1] "The Subconscious," p. 209.

door. After a time she herself entered the room with a small box in her hand, saying: "Please give me something to help bury my poor husband." At this there was a commotion in the coffin, the "dead" man sat up, and he, the elderly woman, and the terror-stricken visitor began a conversation. On awaking the dreamer readily traced the dream to two incidents of no importance to him. He had read in his newspaper that evening a paragraph about the burial alive of a man supposed to be dead, and later in the evening he had been asked by a lady to contribute to a missionary fund. These incidents had supplied the material of his dream; the stimulus producing it was in all probability some temporary disorder of the digestive apparatus.

My own experience is much the same. For some years I have made it a practice to analyze my dreams if they are unusually vivid, and, while I cannot always trace their contents to suggestions and associa-

tions derived from incidents of the previous day, in most cases I find that such has been their source. I remember one extremely complicated yet fairly coherent dream in which I was voyaging through the South Sea Islands in company with a couple of sailors. We were shipwrecked, but managed to land on an island, where we were attacked by a number of monkeys, which, to our amazement, presently turned into a regiment of Moors. This last part of the dream and the presence of the sailors I could easily understand, for I had that afternoon been reading a history of the campaigns of the American navy against the Barbary corsairs. But the monkey element remained unintelligible until I suddenly remembered that after reading the naval history I had dipped for a few minutes into a critique of the evolutionary theory.

I find, in fact, that my reading supplies the material for a large proportion of my

dreams, and that many others are traceable to allusions in conversation to persons and topics which are of no great interest to me. One of the most peculiar dreams that I can recollect was built around a chance reference by a carriage-driver to the fact that an acquaintance of mine — a man in whom I have no special interest — once lived in the New Hampshire town where I was making my summer home. Sometimes, it is true, my dreams are manifestly rooted in incidents that have made a deep impression. But this is the exception to the rule, and I am sure that I am not different from other persons in this respect. The problem remains, of course, to determine just why trivial incidents should predominate in dream formation.

In solving this problem, as in solving so many other problems in normal psychology, recourse must be had to certain facts lately brought to light by those whose special business it is to investigate the

workings of the mind under abnormal conditions. Of such facts the most important in the present connection is the persistence, in the way of subconscious memories, of long-forgotten happenings having a profound emotional significance — frights, griefs, worries, shocks of various kinds, secret desires, and so forth. These subconscious memories — which form, together with their emotional coloring, what is technically called a "complex" — are to-day known to constitute an important factor in the causation of many nervous and mental diseases, particularly hysteria and other psychoneuroses.

The theory, first advanced by the Viennese psychopathologist Sigmund Freud, is that the memories in question are forgotten by the upper consciousness simply because they are of a painful character, or of a character otherwise incompatible with the best interests of the one who experienced them. But, although thus repressed and

thrust from consciousness, they are far from being blotted out. Subconsciously they remain as vivid and intense as when first experienced; and, in addition, they perpetually seek to assert themselves and appear once more in the field of conscious memory. Such is the human constitution, however, that they can do this only on condition of being so transformed that the upper consciousness shall not recognize them for what they really are.

One form of transformation, in the case of persons predisposed by conditions of heredity and environment, is into the symptoms of hysteria. Or, as Freud himself would say, hysterical symptoms are so many monuments to subconsciously remembered emotional experiences. In the case of normal persons the process of transformation does not involve such violent manifestations of the underlying psychic energy, which "works itself off" quite peacefully by various channels, and notably

through the medium of dreams. In truth, every dream, according to the theory of Freud, is symbolical, and on close analysis will be found related to, and expressive of, some secret, subconscious emotional complex. Besides which, Freud finds a strong "wish" element in all dreams, and has even ventured to sum up his theory of dreams in the single formula:

Every dream at bottom represents the imaginary fulfillment of an ungratified wish.[1]

Now, while I am not prepared to indorse the Freudian hypothesis in its entirety, and while I am inclined to agree with Morton Prince, Boris Sidis, and Havelock Ellis in holding that Freud, as regards both hysteria and dreams, has allowed the passion for generalization to carry him to a rash extreme, I am nevertheless convinced

[1] The Freudian theory of dreams, together with its practical implications, will be found worked out in detail in Doctor Coriat's contribution to this series of handbooks, "The Meaning of Dreams."

that he has furnished the necessary clue to the solution of the problem immediately before us — the problem of the strange influence exercised over our dreams by trivial incidents of the waking state.

It is all a matter of "association of ideas," and trivial incidents, being numerically far in excess of important ones, are proportionately more likely to affect by association some buried complex which, unable to cross the threshold of consciousness in its true form, finds expression, during sleep, in the presentation of dream images centering about the incident that has excited it into activity. During the day I do a hundred and one things; I talk with many people. Somebody casually mentions to me the name of John Smith, and that night I have a vivid dream with John Smith figuring in it. It is not because I am very much interested in him that I dream about him; I may not have a speaking acquaintance with him. I

dream about him because the mention of his name has, consciously or subconsciously, stirred within me, by association of ideas, a memory of some one or some thing that is, or was once, of keen emotional significance to me.

There are dreams, it should be added, in which the buried complex does manage to show itself directly to the dreamer; but dreams of this type are mostly forgotten on awaking, and can be recalled only by the use of hypnotism or some other method of reaching into the subconscious. That they are often worth recalling every psychopathologist will testify, for in a number of cases they have been the only means of ascertaining the true cause of symptoms for which patients have long sought relief in vain. In like manner, the analysis of consciously remembered dreams, no matter how absurd they superficially seem, often results in unearthing the complexes responsible for hysterical

symptoms, and impressively corroborates the view just set forth. In every case where psychological analysis is employed on neurotic patients it is found that their dreams are fundamentally connected with the emotional disturbances to which their nervous and mental troubles are due.

To summarize, then, it may be said that in the ordinary, average dream, with which alone we are here concerned, there is always an initial physical stimulus, whether internal or external, to give occasion to the dream; that the dream represents an effort to interpret this stimulus; and that the manner of the interpretation — the story the dream tells — is ultimately determined, not by the stimulus itself, but by the character of the emotional complexes that have been roused to greatest activity by incidents of the waking life of the previous day.

Chapter III

Dreams and the Supernatural

No account of the state of the mind in sleep would be complete without an analysis of certain exceptional types of dream which seemingly are not to be explained in accordance with the principles stated above, and the contents of which are such as to give rise to a widespread belief that there is something supernatural in them. There are dreams, for example, in which notable conceptions in art, literature, or science are presented to the dreamer, and remembered by him with such clearness that they may be afterwards converted into permanent products of the mind. There are other dreams in which problems that have baffled the dreamer's earnest endeavor while awake

are instantaneously and often most dramatically solved for him while he sleeps. Akin to these are dreams in which the hiding-places of lost articles are mysteriously made known. And, finally, there are dreams in which information is gained of events occurring at a distance from the dreamer, and sometimes of events whose occurrence is still a thing of the future.

Of these four classes of unusual dreams, an abundance of instances might be mentioned. It is well known that the late Robert Louis Stevenson obtained through dreams the plots for some of his best stories, including the weird but immortal "Dr. Jekyll and Mr. Hyde"; Coleridge's "Kubla Khan" is another famous dream composition; while Tartini's "Devil's Sonata" was the result of a dream in which the devil appeared to Tartini and played the sonata to which the composer gave that name. The same element of dramatic impersonation appears even more strikingly in the

singular experience of Professor H. V. Hilprecht, to whom there was revealed in sleep the solution of a seemingly insoluble archæological problem. Professor Hilprecht's account of his dream has often been quoted, but it is so much to the point in the present connection that it will bear repetition:

"One Saturday evening about the middle of March, 1893," he says, "I had been wearying myself, as I had done so often in the weeks preceding, in the vain attempt to decipher two small fragments of agate which were supposed to belong to the finger-rings of some Babylonian. The labor was much increased by the fact that the fragments presented remnants only of characters and lines, that dozens of similar small fragments had been found in the ruins of the temple of Bel at Nippur with which nothing could be done, and that in this case, furthermore, I had never had the originals before me, but only a hasty sketch

made by one of the members of the expedition sent by the University of Pennsylvania to Babylonia. I could not say more than that the fragments, taking into consideration the place in which they were found and the peculiar characteristics of the cuneiform characters preserved upon them, sprang from the Cassite period of Babylonian history (about 1700–1140 B.C.). Moreover, as the first character of the third line seemed to be KU, I ascribed this fragment, with an interrogation point, to King Kurigalzu, while I placed the other fragment, as unclassifiable, with other Cassite fragments, upon a page of my book where I published the unclassifiable fragments. The proofs already lay before me, but I was far from satisfied.

"The whole problem passed yet again through my mind that March evening before I placed my mark of approval under the last correction in the book. Even then I had come to no conclusion. About

midnight, weary and exhausted, I went to bed, and was soon in deep sleep. Then I dreamed this remarkable dream:

"A tall, thin priest of the old pre-Christian Nippur, about forty years of age, and clad in a simple abba, led me to the treasure chamber of the temple, on its southeast side. He went with me into a small, low-ceiled room without windows, in which there was a large wooden chest, while scraps of agate and lapis lazuli lay scattered on the floor. Here he addressed me as follows:

"'These two fragments which you have published separately upon pages 22 and 26 belong together, are not finger-rings, and their history is as follows: King Kurigalzu (about 1300 B.C.) once sent to the temple of Bel, among other articles of agate and lapis lazuli, an inscribed votive cylinder of agate. Then we priests suddenly received the command to make for the statue of the god Ninib a pair of earrings of agate. We were

in great dismay, since there was no agate as raw material at hand. In order to execute the command there was nothing for us to do but cut the votive cylinder into three parts, thus making three rings, each of which contained a portion of the original inscription. The first two rings served as earrings for the statue of the god; the two fragments which have given you so much trouble are portions of them. If you will put the two together, you will have confirmation of my words. But the third ring you have not yet found in the course of your excavations, and you will never find it.'

"With this the priest disappeared. I awoke at once, and immediately told my wife the dream, that I might not forget it. Next morning — Sunday — I examined the fragments once more in the light of these disclosures, and to my astonishment found all the details of the dream precisely verified, in so far as the means of verification were in my hands. The original

inscription on the votive cylinder read, 'To the god Ninib, son of Bel, his lord, has Kurigalzu, pontifex of Bel, presented this.'"[1]

The solving of mathematical problems in sleep would seem to be of especially frequent occurrence. I know of one case in which a stiff problem in differential calculus was worked out in a dream. An English engineer, Mr. F. J. Jones, has reported that he once dreamed the answer, "a number with several places of decimals," to a problem which had long baffled him. In another case a business man who had been trying for two months to correct an error in his cash accounts had a vivid dream in which the mistake was shown to be due to a complicated cross-entry. While still asleep he got out of bed and made a memorandum on a slip of paper, for the purpose of helping him to make the necessary correction the next day. Oddly enough, when

[1] *Proceedings of the Society for Psychical Research*, vol. XII, pp. 14–15.

he awoke in the morning, he forgot all about the dream and the memorandum. But that evening, while shaving for dinner, he chanced to pick up the slip to wipe his razor, saw the memorandum on it, and at once remembered his dream.

"The effect on me," he states, "was such that I returned to our office and turned to the cash-book, where I found that I had really, when asleep, detected the error which I could not detect in my waking hours, and had actually jotted it down."[1]

Sometimes the dream action involves, at one and the same time, the solving of a problem and an actual work of creation. I cite from my recently published book, "Adventurings in the Psychical," a typical case communicated to me by the dreamer himself, Mr. B. J. S. Cahill, a leading Pacific Coast architect.

Mr. Cahill had been commissioned to

[1] *Proceedings of the Society for Psychical Research*, vol. VIII, p. 395.

design a twenty-six-story office building, to be erected in Portland, Oregon, and he determined, if possible, to plan one that would be a real contribution towards the solution of some of the most difficult problems of modern commercial architecture. For weeks he labored hard to devise a building that would unite a maximum of beauty, solidity, and capacity, with an abundance and as nearly as possible an equality of light and air for the many offices it was to contain. The structure he ultimately conceived was certainly novel, and differed conspicuously from the ordinary four-sided office building, with its inner offices lighted from a court.

His plan called for the construction of a building shaped much like a St. Andrew's cross, or like a square with a triangle cut out of each side. In this way the need for an inner court was completely obviated, and the only poorly ventilated and dimly lighted portion of the building would be its

central "core." Here the elevators and stairs were to be located.

According to the architect's own statement, this plan — which was highly praised by so eminent a critic as Mr. Montgomery Schuyler — was born in his mind while he slept. One night he saw in a dream a building shaped in this fashion, and knew that his problem was solved. He tells me that on awaking he made two rough sketches of the plan in a pocket note-book — one showing the general design, the other indicating the appearance of the building when completed.

As to the revelation in dream of the whereabouts of lost articles, I would also cite from my book, "Adventurings in the Psychical," an exceptionally interesting case reported to me by a young lady attending college at Greeley, Colorado. Her father had sent her a check, which for a day or two she delayed cashing. Then, being without money, she looked for it in the place

where she supposed she had put it, but, to her dismay, discovered that it was not there. A thorough search of her room failed to bring it to light, and, as it was not a personal check of her father's, she was greatly worried, thinking that it might be impossible to duplicate it.

A couple of nights later she had a curious dream in which she saw herself standing in front of a bookcase in the college library. On a certain shelf were five books, one bound in blue, another in yellow, and between them three with a white binding. She took down one of the white-covered volumes, opened it idly, and in the middle of the book found her check.

Next morning she awoke with no memory of the dream, nor did she recall it when, later in the day, she visited the college library and came across this identical placing of books. It recurred to her only when she glanced into one of the white-covered volumes. Feeling rather "foolish" and also

not a little apprehensive, she took down a second volume of the same set, opened it, and there, sure enough, was the missing check!

On the same order is a dream reported from Guilford, Vermont, to the late Professor James. In this instance the dreamer, Mr. J. L. Squires, was a young man in the employment of a Guilford farmer, T. L. Johnson. Narrating his singular experience to Professor James, Mr. Squires said:

"In the month of September, 1887, I was about one mile from the farm buildings with a young man named Wesley Davis — with whom I had for several years been acquainted, and who had been working with me for several months at said Johnson's — looking after some cattle that had strayed from a pasture. The cattle, eighteen or twenty head, were found in a large mow lot, and, seeing us, started to run away in a direction opposite to that in which we wished to drive them.

"In order to head off the cattle and turn them back, Davis ran one way and I the other, and while running Davis lost his watch and chain from his vest pocket, but did not discover his loss until eight or nine o'clock that night, when it was, of course, too late to search for it. Believing that he must have lost the watch while engaged in getting the cattle back into the pasture, Davis and myself returned to the place the next morning and looked for the watch all the forenoon.

"Not having any idea of the probable locality in which the watch was lost, and not being at all certain that it was lost while after the cattle, we did not succeed in finding it, although we searched for it until twelve o'clock. The watch was one that Davis had for some time, and he was much attached to it, and felt very badly about his loss. He worked hard for his living, and could not afford to lose the watch, for which he had paid twenty-five dollars. I

felt sorry for him, and thought about the watch continually all the afternoon after we returned from looking for it, and was still thinking of it when I went to sleep that night.

"During my sleep, at what hour I could not tell, I saw the watch as it lay upon the ground in the mow lot, over a mile away. It was in grass at least ten inches high. The face of the watch was turned up, and the small steel chain which was attached to it lay like a curve in a half circle. About three feet from the watch was a large spot where the grass had been crushed and matted by a creature lying down; about ten rods to the north was a brush fence; about ten or twelve feet to the eastward of the watch was a granite cobblestone one or two feet in diameter, which lay about half out of the ground.

"When I awoke the next morning, which was Sunday, I felt as certain that I could go straight to the watch as if I had really

seen it, and told Davis so, and tried to have him go out and get it. He had no faith in my 'vision,' 'dream,' or whatever it may be called, and would not go. In spite of the jests and laughter of the entire family, I saddled a horse and went directly to the watch, which I found with all its surroundings exactly as I had seen it. I was not nearer than forty rods to Davis when the watch was lost, as I ascertained after it was found.

"The watch had run down and stopped, the hands pointing to 9.40 o'clock, which I also noted in my dream."

Compare with this the following statement communicated to the American Society for Psychical Research by Professor Josiah Royce, of Harvard University, as coming from a trustworthy lady of his acquaintance:

"A number of years ago I was invited to visit a friend who lived at a large and beautiful country-seat on the Hudson. Shortly

after my arrival I started, with a number of other guests, to make a tour of the very extensive grounds. We walked for an hour or more, and thoroughly explored the place. Upon my return to the house I discovered that I had lost a gold cuff-stud that I valued for association's sake. I merely remembered that I wore it when we started out, and did not think of or notice it again until my return, when it was missing. As it was quite dark, it seemed useless to search for it, especially as it was the season of autumn and the ground was covered with dead leaves.

"That night I dreamed that I saw a withered grape-vine clinging to a wall, and with a pile of dead leaves at its base. Underneath the leaves, in my dream, I distinctly saw my stud gleaming.

"The following morning I asked the friends with whom I had been walking the previous afternoon if they remembered seeing any such wall and vine, as I did not.

They replied that they could not recall anything answering the description. I did not tell them why I asked, as I felt somewhat ashamed of the dream, but during the morning I made some excuse to go out in the grounds alone. I walked hither and thither, and after a long time I suddenly came upon the wall and vine exactly as they looked in my dream. I had not the slightest recollection of seeing them or passing by them on the previous day. The dead leaves at the base were lying heaped up, as in my dream. I approached cautiously, feeling rather uncomfortable and decidedly silly, and pushed them aside. I had scattered a large number of leaves when a gleam of gold struck my eye, and there lay the stud exactly as in my dream."

Professor Royce's informant adds that this experience will always be remembered by her as something "uncanny." Similarly, the young lady who found her check in the book in the college library informs me

that the dream which enabled her to find it has troubled her greatly, and it is evident that she is inclined to regard it as a supernatural manifestation. It would not be difficult to imagine her state of mind had the dream taken some such form as that reported by Professor Hilprecht; or if, as has been known to happen, the desired information had been given by a vision of the "ghost" of some deceased relative. There is, for instance, the strange dream of Miss Elizabeth Conley, occurring immediately after the death of her father, an Iowa farmer, who had gone from his home, near Ionia, to Dubuque on business, had been found dead in a hotel shed, and had been taken to the morgue, where, after the inquest, his body was made ready for shipment home.

The clothes he had been wearing were so old, torn, and soiled that they were discarded, made into a bundle, and left in the morgue yard to be disposed of later. But

the next day, when Mr. Conley's son reached Ionia with the body, he was asked by his sister Elizabeth what had been done with their father's clothes.

"Father came to me in a dream," she declared, "and told me that after leaving home he had sewed a roll of bills inside his shirt, in a pocket made with a piece of my red dress."

The brother, not unnaturally, doubted the value of a statement coming from such a source, but his sister was so wrought up that the family physician advised him to return to Dubuque and make inquiry, if only to set her mind at rest. There followed the discovery that a pocket had, in fact, been sewed inside the shirt with a piece of red cloth, awkwardly stitched as by a man's hand, and that it contained thirty dollars in bills.

From a dream like this it is but a slight transition to the last of our four classes of exceptional dreams — to dreams, that is to

say, in which information would seem to be supernaturally given of events occurring at a distance from the dreamer, and of events of future occurrence. In the main such dreams are concerned with coincidental or impending misfortune, and there is frequently a vivid presentation of the person chiefly concerned, with sometimes a more or less detailed view of the attendant circumstances. Thus Canon Warburton, reporting an experience of his youth, relates that he once dreamed of seeing his brother coming out of a ball-room in a distant part of London and falling down the stairs. Half an hour later he was joined by the brother, who told him of a narrow escape he had had from serious injury by a fall in the manner seen in the dream.

Or, if it is a case of death coincidence, the "ghost" of the dead person may appear to the dreamer, and may even be heard to speak, as in a weird experience narrated by a reputable London business man to Mrs.

Eleanor Sidgwick, widow of the distinguished scholar Henry Sidgwick. This business man had formerly made his home in Glasgow, where he had a large manufacturing plant, still operated by him at the time of the dream. Among his employees was a Robert Mackenzie, who had been in his service for many years, and in whose welfare he was much interested. On the Saturday before the dream the employees of the factory had their annual ball. The following Tuesday, the manufacturer affirms:

"I dreamed, but with no vagueness, as in common dreams, no blurring of outline or rapid passages from one thing disconnectedly to another, that I was seated at a desk, engaged in a business conversation with an unknown gentleman, who stood on my right hand. Towards me, in front, advanced Robert Mackenzie, and, feeling annoyed, I addressed him with some asperity, asking him if he did not see that I was

engaged. He retired to a short distance with exceeding reluctance, and turned again to approach me, as if most desirous of an immediate colloquy, when I spoke to him still more sharply as to his want of manners. On this, the person with whom I was conversing took his leave, and Mackenzie once more came forward.

"'What is all this, Robert?' I asked, somewhat angrily. 'Did you not see that I was engaged?'

"'Yes, sir,' he replied; 'but I must speak with you at once.'

"'What about?' I said. 'What is it that can be so important?'

"'I wish to tell you, sir,' he answered, 'that I am accused of doing a thing I did not do, and that I want you to know it, and I tell you so, and that you are to forgive me for what I am blamed for, because I was innocent.'

"Then, 'I did not do the thing they say I did.'

"I said, 'What?' getting the same answer. I then naturally asked:

"'But how can I forgive you if you do not tell me what you are accused of?'

"I can never forget the emphatic manner of his answer, in the Scottish dialect:

"'Ye'll sune ken.'

"This question and the answer were repeated at least twice — I am certain the answer was repeated thrice, in the most fervent tone. On that I awoke, and was in that state of surprise and bewilderment which such a remarkable dream might induce, and was wondering what it all meant, when my wife burst into my bedroom, much excited, and, holding an open letter in her hand, exclaimed:

"'Oh, James! here's a terrible end to the workman's ball: Robert Mackenzie has committed suicide!'

"With a full conviction of the meaning of the vision, I at once quietly and firmly said:

"'No, he has not committed suicide.'

"'How can you possibly know that?'

"'Because he has just been here to tell me.'"

Later word was received from the manager of the Glasgow establishment stating that, as a matter of fact, Mackenzie had not committed suicide, the evidence at the inquest showing that he had taken a drink by mistake from a bottle of poison, thinking it was whisky.[1]

Again, the message of death or disaster may be apprehended in dream symbolically, without the presence of the principal actor in the distant tragedy. I once received a letter from a lady living in Brooklyn, describing an experience that strikingly illustrates this point. Her dream, however, was of such an intimate character that the names of the persons and places must be suppressed. Three years ago, this lady

[1] *Proceedings of the Society for Psychical Research*, vol. III, pp. 95–98.

writes, her daughter became interested in a young man, Mr. V., whose suit, however, the mother discouraged. Afterwards her daughter met, fell in love with, and was happily married to a physician in the Government service. She soon went abroad with her husband, to a remote and isolated post. My informant continues:

"We could not hear from them all winter because they were ice-bound, but my thoughts of them were always most delightful, for their last letters were bubbling over with happiness, and I was lovingly busy getting things ready for them.

"Mr. V. had almost passed from my mind, when one morning, in the middle of June, I arose, took a bath, and, having a half-hour to spare, went back to bed again, falling into a deep sleep.

"Suddenly Mr. V. appeared to me in one of my lower rooms. It seemed to be breakfast time, and I invited him to have some. He accepted, and we sat together

for some time, but I do not remember any of our conversation. Suddenly he arose, faced me, and, looking straight into my eyes, said emphatically:

"'Now she is mine! Nothing you can do will ever separate us again! This time she will belong to me!'

"I awoke with a start, much frightened. Then, realizing the situation, I thanked Heaven she was safely married, and promptly put the dream from me. This was about eight o'clock. At ten a despatch reached me saying that my daughter's husband had died, from the result of a boating accident, two weeks before."

Of dreams revealing events not of past or present but of future occurrence an astonishingly large number with excellent credentials have been recorded. Usually the premonitory dream is one of death or illness, and generally concerns either the dreamer himself or one of his intimate friends. Sometimes it indicates a course of action

which, if followed, will avert its fulfillment. Typical in this respect is the dream of a lady whom I will call Mrs. Z.

She dreamed that, driving in her brougham along a London street north of Piccadilly, the family coachman fell from the box and struck heavily on his head. Shortly before going to bed she had decided to drive next day to Woolwich, but the dream so disturbed her that she almost changed her mind. However, not wishing to seem superstitious, she went as planned.

Nothing happened until Piccadilly was reached on the return journey. Then Mrs. Z. noticed that other coachmen were staring at her carriage; and, looking through the glass front of the brougham, she saw that her driver was leaning back in his seat, as though to restrain the horse. As the carriage turned out of Piccadilly the memory of her dream flashed into her mind. She ordered the brougham stopped, jumped out, and called to a near-by policeman to catch

the coachman, which he did just as the latter swayed and fell from the box. It developed that he had been ill since the previous day, and had gradually fainted from exhaustion during the drive home.

On the other hand, there may be nothing in the least portentous in a premonitory dream; it may be concerned only with some trivial or bizarre happening. This is too often overlooked by those who insist on seeing a supernatural agency at work in all exceptional dreams. There is one odd case, amply corroborated, in which a lady dreamed that on entering her drawing-room after church, she saw five dark little spots on the new carpet, and that these turned out to be holes burned into the carpet. The next day was Sunday, and she went to church as usual. On her return she visited the drawing-room, where she found that a careless housemaid had dropped some hot coals on the carpet, causing five little burned patches. Akin

to this is Mr. Frederick Greenwood's dream of the dead hand.

"One night," says Mr. Greenwood, "I dreamed that, making a call on some matter of business, I was shown into a fine great drawing-room and asked to wait. Accordingly I went over to the fireplace, in the usual English way, preparing to wait there. And there, after the same fashion, I lounged with my arm upon the mantelpiece; but only for a few moments. For, feeling that my fingers had rested on something strangely cold, I looked, and saw that they lay on a dead hand: a woman's hand newly cut from the wrist.

"Though I woke in horror on the instant, this dream was quite forgotten — at any rate, for the time — when I did next day make a call on some unimportant matter of business, was shown into a pretty little room adorned with various knickknacks, and then was asked to wait. Glancing by chance toward the mantelpiece (the dream

of the previous night still forgotten), what should I see but the hand of a mummy, broken from the wrist. It was a very little hand, and on it was a ring that would have been a 'gem ring' if the dull red stone in it had been genuinely precious. Wherefore I concluded that it was a woman's hand."[1]

Neither this dream nor that of the burned holes in the carpet served any useful purpose, or any purpose whatever. Yet they pointed as directly and vividly to future events as did Mrs. Z.'s dream, or as do the numerous dreams on record predicting the illness or death of the dreamer or of one of the dreamer's friends. There is reason, then, for inferring that the mechanism in all such cases is much the same. Either they are all "supernatural dreams" or there is nothing "supernatural" in any of them. On the other hand, they cannot be dismissed by raising the cry of "chance coincidence" or by insinuating that possibly the tellers

[1] "Imagination in Dreams," p. 197.

of the dreams did not adhere strictly to the truth.

This is the so-called explanation advanced by many persons with respect to all four classes of the exceptional dreams described and illustrated above. They forget that people do not tell untruths that are likely to expose them to ridicule. There may be some few who, from a morbid desire for notoriety, do exaggerate and distort, or even concoct positive falsehoods in representing themselves as the heroes or heroines of experiences which they did not really have. But the prevailing tendency is to conceal, not to make public, dreams of the type in question.

Nothing, indeed, is more difficult than to induce people to go on record concerning such dreams. I am frequently in receipt of letters reporting them as personal experiences, and almost always the writers betray a profound dread of publicity. "Please consider this confidential," "I

have not dared to tell this to any one before," "If you make any use of this I beg you not to mention my name," "I would not for worlds have my friends know of this, for they would think I was crazy" — phrases like these recur with monotonous regularity. To psychical researchers it is a familiar story. There are undoubtedly creative, revelatory, monitory, and premonitory dreams, but people who have them, since they can account for them only on the theory that "ghosts did it," do not care to make the facts public lest they be deemed superstitious or insane.

Yet, if they only knew it, modern science can give a satisfactory explanation for all exceptional dreams on other than "ghostly" grounds. Only a short time ago, it must be acknowledged, this could not have been said, but within recent years the development of new methods of experiment and observation, and the systematic probing into the nature and possibilities of the

human mind carried on alike by psychologists and psychical researchers have opened up vistas of knowledge far transcending those possessed by previous generations.

Assuming, then, that a given exceptional dream is vitiated neither by errors of memory nor by deliberate falsification, how would science explain it? What are the facts which science has to offer, enabling us to understand, without resort to the supernatural, how we can have dreams in which we arrive at great creative conceptions, solve difficult problems, trace lost articles, obtain information of events occurring at a distance, and even gain glimpses into futurity?

There is, first, the fact that the processes of the mind in sleep closely parallel those of the waking consciousness. As was shown in the preceding chapter, we think, we reason, we exercise our imagination, in sleep in very much the same way as when awake. And, whether awake or asleep,

much of our mental activity is "subconscious" — in sleep, indeed, it is wholly so. We have the faculty, without conscious, voluntary effort, of drawing on the storehouse of our memory, recalling percepts — sights, sounds, etc. — of our waking life, and utilizing them as the material for a train of thought which, through a dream, provided that we remember it, may be consciously apprehended by us.

There is the further important consideration that, when awake, not only do we do much of our thinking subconsciously, but we also do much of our perceiving in the same way. Every sight and sound of the waking life, whether noticed or unnoticed, makes an impression on our mind, and may be afterwards recalled in memory. This, beyond any question, is one of the most significant of the discoveries of latter-day psychology, and its actuality has been proved time and again by scientific experiment.

It has been found, for example, that when persons are hypnotized, they can recall in minute detail incidents of which they never had conscious knowledge, but which demonstrably formed part of their past experiences. The same principle has been otherwise established through experiments with that peculiar method of inducing visual hallucinations known as crystal-gazing. There is in England a lady, Miss Goodrich-Freer, a well-known member of the Society for Psychical Research, who has for years been experimenting in crystal vision, with the result of adding appreciably to scientific knowledge of the workings of the mind. It would be tedious to quote at any length from the records of her experiments,[1] but some quotation may profitably be made, in order to give a clear idea of the marvelous possibilities of subconscious perception. On one occasion she reports:

[1] These will be found in the *Proceedings of the Society for Psychical Research*, vol. V, pp. 486–521; vol. VIII, pp. 484–495.

ATHEDRAL HIGH SCHOOL
LIBRARY
SHELF No.

"I saw in the crystal a pool of blood (as it seemed to me) lying on the pavement at the corner of a terrace close to my door. This suggested nothing to me. Then I remembered that I had passed over that spot in the course of a walk of a few hundred yards home from the circulating library; and that, the street being empty, I had been looking into the books as I walked. Afterwards I found that my boots and the bottom of my dress were stained with red paint, which I must have walked through unobservingly."

And again:

"I saw in the crystal a young girl, an intimate friend, waving to me from her carriage. I observed that her hair, which had hung down her back when I last saw her, was now put up in young-lady fashion. Most certainly I had not consciously seen even the carriage, the look of which I knew very well. But next day I called on my friend; was reproached by her for not having ob-

served her as she passed; and perceived that she had altered her hair in the way which the crystal had shown."

Once somebody suggested to Miss Goodrich-Freer that she look in the crystal with the intention of seeing, not pictures, but words. She was immediately rewarded by the sight of what was obviously a newspaper announcement.

"It reported," she states, "the death of a lady at one time a most frequent visitor in my circle, and very intimate with some of my nearest friends; an announcement, therefore, which, had I consciously seen it, would have interested me considerably. I related my vision at breakfast, quoting name, date, place, and an allusion to 'a long period of suffering' borne by the deceased lady, and added that I was sure that I had not heard any report of her illness, or even, for some months, any mention of her likely to suggest such a hallucination. I was, however, aware that I had the day

before taken up the first sheet of the *Times*, but was interrupted before I had consciously read any announcement of death. Mrs. Henry Sidgwick, with whom I was staying, immediately sought for the paper, where we discovered the paragraph almost exactly as I had seen it."

Suppose that, instead of getting the information of her friend's death by means of a little picture in a crystal, Miss Goodrich-Freer had had a dream in which the dead friend appeared to her and solemnly said: "I have had a long period of suffering, but it is over now." And suppose that the next day word had been received of the friend's death, Miss Goodrich-Freer meanwhile having completely forgotten that she had glanced at the *Times*. Would this not have been on a par with many of the dreams that bring amazement and consternation to their dreamers?

In truth, these two facts, of subconscious mentation and subconscious perception,

are of themselves sufficient to account for by far the greater number of dreams that smack of the supernatural. Always, it is to be noted, the dreams of the first of our four classes, the creative dreams, are of a kind appropriate to the waking thoughts and activities of the dreamer. Robert Louis Stevenson, a writer of stories, gets the plots of stories in dream. He does not, like Tartini, get a "Devil's Sonata," nor yet the conception for a valuable innovation in commercial architecture, such as was dreamed by the Pacific Coast architect. The subconscious, after all, is closely linked to the conscious. Whatever chiefly concerns a man's conscious thoughts will be the chief concern of his subconscious thinking, awake or asleep.

The artist will subconsciously think of subjects, colors, combinations; the musician, of themes and harmonies; the mathematician, of mathematical theories and applications. Hence, too, when one's

thoughts in sleep turn to the solution of problems rather than the exercise of creative imagination, the problems dealt with will invariably be those that are of greatest interest to the sleeper when awake.

Undoubtedly, though, subconscious perception has a very special influence in many dreams that give the solution of problems. Professor Hilprecht, to return to one of our illustrative cases, had for weeks been striving to solve the riddle of the agate fragments. Consciously he had formulated and rejected many tentative interpretations. All the while, his tireless poring over the problem was adding to the store of his subconscious as well as conscious percepts relating to it. Subconsciously he would be ever approaching closer to the solution which, in his case, was finally attained while he slept, being presented to him, in accordance with the recognized tendency of the sleeping consciousness to

dramatize its material, in the form of a weird dream-story.

Precisely the same explanation would apply in the case of the business man to whom was revealed in dream the source of the baffling error in his cash account. So, likewise, in subconscious perception we have an adequate explanation for all dreams in which the hiding-place of some lost article is made known. The young lady in Greeley, so worried by the dream that aided her in recovering her lost check, tells me that after the recovery of the check she remembered that the book in which it was found had been in her room for some hours the day she received her father's letter. What happened, I have no doubt, was that she absent-mindedly slipped the check into the book, and then, so far as her upper consciousness was concerned, forgot all about it. But subconsciously she would remember — as we know from experiments such as those carried on by Miss Goodrich-

Freer — and subconsciously would be reminded of it the day before the dream when, in the college library, she happened to see the same book again, without, perchance, any conscious knowledge of seeing it. That night, in sleep, her mind busied itself once more with the problem of the missing check, this time to good purpose.

The application of the same principle to the similar cases cited by me need not long detain us. It is only necessary to assume, in the first case, that Mr. Squires, without being aware of the fact, saw the lost watch while searching for it in the hay-field; and, in the second case, that Professor Royce's informant glimpsed her stud as it fell among the leaves, but did not consciously realize that it was her stud that had fallen. In both cases a memory of the incident and its setting would be subconsciously retained. In the case of Elizabeth Conley's dream, which is on the same order, it is altogether probable that Miss Conley had once known,

but had forgotten, her father's intention to sew a pocket into his shirt.

Nor need we go beyond subconscious perception — or, at most, telepathy between living minds — to explain premonitory dreams.[1] When it is a dream of disease or death impending for the dreamer, there is always the possibility that, as in my cat-clawing dream cited in the preceding chapter, disease had already so far progressed as to cause organic changes occasioning sensations too slight to be appreciated by the waking consciousness, but sufficient to stimulate the sleeping consciousness to activity. When the dream

[1] It must frankly be added that there are on record certain well-attested dreams of a "clairvoyant" character — relating especially to the recovery of the bodies of people who have died under circumstances seemingly unknown to any living person — which appear to defy explanation on even a telepathic basis. But this does not necessarily mean that one must resort to a "ghostly" hypothesis to explain them. It may be that such dreams are evidential of an as yet unrecognized natural power of the human mind. This view, indeed, is vigorously maintained in a recent book, "On the Cosmic Relations," by Mr. Henry Holt; who, for that matter, would also apply his hypothesis of a "cosmic sense" to explain all dreams.

relates to the illness of some one other than the dreamer, it is safe to assume that, consciously or subconsciously, an inkling of the state of that other person's health had been obtained by the dreamer before the dream.

Take Mrs. Z.'s peculiar dream of the falling coachman. Her own statement shows that the coachman had been quite ill the day before, and was in no condition to undertake a long drive. It is not unreasonable to assume that Mrs. Z. noticed that he was not looking well, and subconsciously asked herself whether he would be fit to take her driving next day, a question which her subconsciousness answered by prefiguring an accident likely to occur under the circumstances.

The element of the marvelous is equally obliterated from such dreams as those of the dead hand and the holes burned in the carpet, when we take into consideration, as we are bound to do, the possibilities of

subconscious mental action. Mr. Frederick Greenwood, thinking of the business call he had to make next day, would be reminded of the house he was to visit, and this would readily serve to evoke in his sleeping consciousness a memory of the mummy's hand on the mantelpiece. As to the dream of the holes in the carpet, the probability is that they were burned into the carpet the night before the dream, not the day after it, and that the dreamer saw them "out of the corner of her eye," as she passed the drawing-room on her way to bed. Otherwise her dream is inexplicable on any hypothesis, even that of "spirit agency." It is preposterous to imagine that "spirits" would trouble themselves with notifying anxious housewives of the imminence of trifling domestic mishaps.

Another and more difficult problem is presented by well-authenticated dreams that involve coincidental action at a distance, although there is reason for believing

that many even of these have a very simple explanation. To give a specific instance, the dream of the London business man relating to the alleged suicide of his employee, Mackenzie, was in all likelihood nothing more than the reaction of his sleeping consciousness to the news brought him by his wife when she rushed into the room. He was, as his account indicates, not more than half awake when he heard his wife's statement. Dreams, as we know, come quickly, and in a few seconds a complicated dream-story can present itself to the mind. The business man, in a semi-waking, semi-sleeping state, would subconsciously protest against the accusation that an old and trusted employee, with whose character he was fully acquainted, had taken his own life; and the subconscious protest would instantly frame itself as a dramatic dream.

This might also be said of the Brooklyn lady's dream symbolizing the death of her

son-in-law, if only we could be sure that the news of the death was already known to other members of her household, so that she might have overheard them talking about it while taking her bath. Against such a possibility, however, has to be set her positive declaration that the despatch announcing the death was not received until two hours after the dream. Even so, it would not be necessary to introduce a ghostly agency as an explanatory factor. For there is the possibility that the news was conveyed to her mind from the mind of her sorrowing daughter by telepathy, or thought transference. The same process would explain Canon Warburton's dream of the accident to his brother.

But, it may be objected, if subconscious mental action is thus responsible for exceptional dreams, why do we not have them oftener? For just this reason, that, at bottom, they are exceptional with regard to their contents rather than their mechan-

ism. Being dreams, they are subject to the laws of dreaming. Like any ordinary dream, they require an initial physical stimulus, whether internal or external. And when the stimulus is received, and the sleeping consciousness sets to work to interpret it, it may very well happen that some emotional complex is so dominant in the sleeper's mind that the resultant interpretation is of the ordinary, not the exceptional, type. Besides which, dreams are easily forgotten, and there is proof that exceptional dreams are no more likely to be remembered than any others. Even in the cases given in this chapter a large proportion of the dreamers entirely forgot their dreams until some chance occurrence recalled them to mind. My own belief is that every one of us has, from time to time, exceptional dreams which fail to find remembrance in the waking state.

Chapter IV

Disorders of Sleep

SLEEP, as was pointed out in the opening chapter, is not an abnormal condition; it is a normal, protective function, having for its purpose the prevention of excessive fatigue. But, like every other function of the human organism, it does not always work smoothly. Many people find it difficult to obtain a proper amount of sleep; and even among those to whom sleep comes readily, its processes often are strangely disturbed. One common disorder of sleep is so disagreeable that its victims would almost prefer to be unable to sleep at all.

This is the nightmare, the well-named "incubus" of the ancient Romans. From time immemorial it has been one of the

afflictions of humanity, and it is to-day as much in evidence as ever it was. Until quite lately, in fact, it was among the wholly unsolved problems of medicine. This, happily, is no longer the case. Recent investigations from the vantage-point of the new science of medical psychology have thrown some sorely needed light on this scourge of the sleeping state, with respect both to its causation and to its proper treatment.

Essentially, as every victim is painfully aware, nightmare is a morbid condition of dreaming, characterized by certain distinctive phenomena. Chief among these are (1) agonizing dread and anxiety; (2) a feeling of weight at the chest, interfering with the power to breathe; (3) temporary paralysis. More elaborately, in the picturesque language of an early writer on the subject:

"The modifications which nightmare assumes are infinite; but one passion is

almost never absent — that of utter and incomprehensible dread. Sometimes the sufferer is buried beneath overwhelming rocks, which crush him on all sides, but still leave him with a miserable consciousness of his situation. Sometimes he is involved in the coils of a horrid, slimy monster, whose eyes have the phosphorescent glare of the sepulchre, and whose breath is poisonous as the marsh of Lerna. . . . Or he may have the idea of a monstrous hag squatted upon his breast — mute, motionless, and malignant; an incarnation of the Evil Spirit — whose intolerable weight crushes the breath out of his body, and whose fixed, deadly, incessant stare petrifies him with horror and makes his very existence unsufferable.

"In every instance there is a sense of oppression and helplessness; and the extent to which these are carried varies according to the violence of the paroxysm. The individual never feels himself a free

agent; on the contrary, he is spell-bound by some enchantment, and remains an unresisting victim for malice to work its will upon. He can neither breathe, nor walk, nor run, with his wonted facility. If pursued by any imminent danger, he can hardly drag one limb after another; if engaged in combat, his blows are utterly ineffective; if involved in the fangs of any animal, or in the grasp of an enemy, extrication is impossible. He struggles, he pants, he toils, but it is all in vain; his muscles are rebels to the will, and refuse to obey its calls. In no case is there a sense of complete freedom; the benumbing stupor never departs from him; and his whole being is locked up in one mighty spasm.

"Sometimes he is forcing himself through an aperture too small for the reception of his body, and is there arrested and tortured by the pangs of suffocation produced by the pressure to which he is exposed; or

he loses his way in a narrow labyrinth, and gets involved in its contracted and inextricable mazes; or he is entombed alive in a sepulchre, beside the mouldering dead. There is, in most cases, an intense reality in all that he sees, or hears, or feels. The aspects of the hideous phantoms which harass his imagination are bold and defined; the sounds which greet his ear appallingly distinct; and when any dimness or confusion of imagery does prevail, it is of the most fearful kind, leaving nothing but dreary and miserable impressions behind it."[1]

The inability to move may persist after the awakening, and we then have what may be called a waking nightmare. There may even be no remembrance of the morbid dream, when the nightmare will naturally seem to the sufferer to be wholly an affair of the waking consciousness. This is the experience of a friend of mine, a well-known American poet and essayist. He even in-

[1] Robert Macnish's "The Philosophy of Sleep," pp. 123–125.

sists that at times he knows he has not been asleep. More commonly, though the precedent dream be forgotten, there is awareness of the fact that one has been sleeping, and the waking nightmare takes the course described in Waller's early "Treatise on the Incubus":

"The uneasiness of the patient in his dream rapidly increases, till it ends in a kind of consciousness that he is in bed and asleep; but he feels to be oppressed with some weight which confines him upon his back, and prevents his breathing, which is now become extremely laborious, so that the lungs cannot be fully inflated by any effort he can make. The sensation is now the most painful that can be conceived; the person becomes every instant more awake and conscious of his situation; he makes violent efforts to move his limbs, especially his arms, with a view of throwing off the incumbent weight, but not a muscle will obey the impulse of the will; he

groans aloud, if he has strength to do it, while every effort he makes seems to exhaust the little remaining vigor. . . . If left to himself, he lies in this state generally about a minute or two, when he recovers all at once the power of volition."

It is not surprising that in pre-scientific days the nightmare was popularly attributed to demons, evil spirits, and witches; and that it gave rise to the vampire superstition, which lingers to-day in some parts of the world. Its first medical treatment was by shaving the head, bleeding, and the administration of wild carrot, parsley, and peony seeds. Later, when its connection with gastric disturbances was clearly recognized, treatment by means of dieting came into vogue. This still is the prevalent method of treatment, despite the important circumstance that it is far from insuring the desired relief. Moreover, as was pointed out a few years ago by Doctor Ernest Jones:

"Any skeptical inquiry immediately reveals two facts. First, that all the alleged causes of nightmare often occur, both alone and in combination, in persons who never show any symptoms of nightmare; a patient whose stomach is half destroyed by cancer may commit all sorts of dietary indiscretions, including even indulgence in cucumber — the article of food that is most looked askance at in relation to nightmare — he may even sleep on his back, and still will defy medical orthodoxy in not suffering from any trace of nightmare. Secondly, that a habitual sufferer from nightmare may be scrupulously rigorous in regard to both the quality and quantity of all that he eats, may in fact develop a *maladie de scrupule* in this direction; that he may martyr himself with elaborate precautions to avoid these and other 'causes' of the malady, and by means of a contrivance of spikes insure against ever lying — let alone sleeping — on his back, but despite all

his endeavors he will have to endure as many and as severe attacks as before."[1]

Quite evidently, one need not fear attacks of nightmare unless one has a special predisposition to it. On the other hand, in order fully to cure nightmare, the nature of this predisposition must be ascertained, and appropriate measures taken to offset it. Within the past few years, or since psychology became linked with medicine, marked progress in this direction has been made. And it has chiefly been made by recognizing that since nightmare is essentially a form of dreaming, it must be, like all dreams, closely linked to, and determined by, subconscious mental states of strong emotional coloring.

In that event, taking into account the characteristic symptoms of dread and helplessness, it would seem logically to follow that nightmare is in the last analysis the product of some subconscious state of ex-

[1] *American Journal of Insanity*, vol. LXVI, p. 405.

ceptional intensity, operating on an organism perhaps unduly impressionable by birth. Such, indeed, is the view now held by the medical psychologists who have studied the nightmare problem. But they are by no means in agreement as to the exact nature of the subconscious state involved.

Some — the Freudian psychologists — would restrict it to latent thoughts and wishes connected with the sexual sphere. These, they say, may be thoughts and wishes of which the individual has never been entirely conscious; but their presence in the recesses of his mind can be detected by careful psychological analysis, and to them his nightmare is wholly due. "The malady known as nightmare," is the way Doctor Ernest Jones puts it, "is always an expression of intense mental conflict centering about some form of 'repressed' sexual desire." In proof whereof the Freudians cite numerous cases of nightmare in which the detection and elimination

of these subconscious sexual ideas have been followed by lasting cures.

It may, however, be reasonably questioned whether Freud and his pupils are justified in thus limiting the causation of nightmare to a single species of subconscious ideas. The observations of other medical psychologists would indicate that it may take its rise from any emotional state of a profoundly disquieting character. Certainly this has been demonstrated in the case of one special variety of nightmare — the *pavor nocturnus*, or "night terrors" — so common in early childhood, and so succinctly described by one physician in these words:

"The child starts up out of an apparently sound sleep, crying with seeming alarm, calling for his mother, and staring wildly around, with every possible expression of terror. Sometimes he jumps from his couch, and runs headlong into a corner, or seeks concealment under the bed, as if

escaping from some frightful object. The eyes are open, tears flow, perspiration covers the skin, there is the greatest excitement, and the little one, clinging convulsively to his parent, will not be quieted. Only after a number of minutes does the child seem to recover the power of recognizing his friends. Presently, however, he lies down, and falls immediately asleep, waking in the morning without the slightest remembrance of the unpleasant event." [1]

Doctor Lyman adds that "night terrors" generally occur only to "neurotic" children. The modern medical psychologist would amend this statement by saying that they occur only to ultra-impressionable children who have been subjected to experiences that have greatly distressed them. These may be experiences in the domain of sex; but they far more frequently relate to occurrences of a non-sexual character. As a matter of fact, anything that profoundly

[1] Henry Lyman's "Insomnia," p. 179.

shocks or alarms a sensitive child may prove provocative of "night terrors"; or, for that matter, of far more serious psychoneurotic symptoms.

This is a point that parents should keep well in remembrance. As things now stand, too many of them unwittingly bring up children in an atmosphere that tends to fill their minds with disquieting images, which, through the subtle force of subconscious mental action, may manifest in "night terrors." The mechanism is well described by the Washington medical psychologist, Doctor T. A. Williams:

"If I say to a small boy that a bear will eat him up, the effect upon his emotions entirely differs whether I make the remark with portentous gravity and horror, or whether I say it with bubbling joviality, as evidently a huge joke. In the first eventuality, the boy will rush to my side in terror, and try to be saved from the bear; and a phobia is in course of construction;

with the latter procedure the boy will laugh consumedly, and it would not take much to make him enter the cage and strike the bear. But even when terrified, a child feels a refuge in the protection of his elders during the day, when they are rarely absent.

"At night, however, the child is alone, and his little consciousness cannot find the easy support of others. Before the kaleidoscope of his dreams pass the various images and accompanying emotions of his waking life, so that if any of these images has become linked with fear, it is certain to bring with it terror, as it surges into dream in the night, and the child jumps up, awakened, in panic, finding no one near upon whom to lean.

"It should not be difficult to see that these 'night terrors' are the product of a suggestion while awake, implicit or explicit. It should not be difficult for those who are forewarned to prevent morbid fears

of this type. . . . The formation of a 'night terror' was nipped in the bud in the case of my own boy, aged three and a half years. I shall try to explain the method.

"For several weeks he had been visiting the zoölogical garden every afternoon, in the company of a French maid of exceptionally forceful character and apparently free from the superstitiousness of the average nurse. For a long time all went well, until one evening the boy began to cry in bed soon after he was left for the night. At this unusual occurrence I mounted the stairs and inquired the cause of the boy's trouble.

"He said there were lions in the house, and that he did not want to stay alone, as he was afraid they would eat him. The source of the idea had been that the lions had roared more loudly than usual on that particular afternoon, and he had been much impressed, standing for some time quite motionless before the cage, though unterrified. I soon convinced the boy that

the lions had to remain in their cages, and could not get out, hence there were none in the house, so that there was no occasion for fear. Of course, it was first necessary to give him the feeling of security gained by embracing me; and, secondly, to begin the conversation by talking of something else — I have forgotten what.

"In this way the state of terror was dismissed, and the feeling of protection was induced before we returned to the subject of the lions; then we made rather a joke of the funny roaring of the lions before we had finished, and he finally lay down with solemn purpose to go to sleep and think, as I suggested, of the tramcars and motors passing outside his open window. It was all a very simple substitution, but it was the prevention of what might have become a serious fear-psychosis if injudiciously handled."[1]

[1] Paper read before the first congress of the American National Society for the Study of Exceptional Children, New York, April 21, 1910.

"Night terrors," in short, are usually the product of a faulty upbringing. Parents who "frighten children to make them good," threatening them with bogies, policemen, or wicked giants, are seriously endangering their psychic welfare. The telling of ghost stories to young children is a particularly effective way to bring on "night terrors," and they have even been traced, by psychological analysis, to the reading of fairy tales that contain gruesome elements. I recall one case in which a six-year-old boy developed typical "night terrors" after listening to such stories as "Jack the Giant Killer" and "The Boy Who did not Know how to Shiver."

The fact that "night terrors" are usually "outgrown" by the eighth or ninth year does not mean that the ideas responsible for them have completely faded from consciousness. On the contrary, they may merely have become what Freud calls "repressed," sinking into the depths of the

subconscious, there to act figuratively as splinters in the mind, occasioning all sorts of symptoms. Nightmares may be one indication of their continuing presence, or may testify to the presence of disquieting ideas developed in an impressionable person through the experiences not of childhood but of later life. In either case, the proper treatment indicated is not so much along medicinal or dietetic lines as by psychological means.

Dieting, to be sure, may prove extremely helpful, for the reason that, as was stated on a previous page, all dreams require an initial physical stimulus, and by dieting the victim of nightmare may diminish the frequency of the particular stimulus — indigestion — that forms a starting-point for his morbid dreams. But the indigestion itself may be a product of his subconscious emotional state, in which case dieting is not likely to help him appreciably, as he will then have indigestion no matter

what he eats. On the other hand, when the emotional state is not too firmly fixed in his subconsciousness, dieting may be of positive curative value, through its "suggestive" influence on the mind.

Whether he diet or no, there is one thing the sufferer from nightmare should do: he should clearly recognize that his trouble is mental rather than physical, and that he helps to perpetuate it by brooding and worrying over it. Years ago, before medical psychology was heard of, a New York physician gave nightmare victims an excellent piece of advice.

"Persons subject to nightmare," he wrote, "should so train the mind as to employ the intellectual faculties systematically, by engaging in some study requiring their full exercise. The action of the emotions should be as much as possible controlled, and the reading of sensational stories, or hearing sensational plays, should be discouraged." [1]

[1] W. A. Hammond's "Sleep and its Derangements," pp. 190–191.

If, however, the cultivation of a calm, hopeful attitude, and the occupation of the mind with interests external to one's self, do not suffice to work a cure, there is only one thing to be done. Aid should be sought from a competent neurologist, a physician trained in the methods of psychological analysis, and able to apply them to unearth and root out whatever "emotional complex" underlies the recurrent nocturnal attacks.

"Emotional complexes," again, are usually responsible for another, and sometimes extremely dangerous, disorder of sleep — somnambulism. In somnambulism, as is well known, a person while asleep talks, walks, and performs all manner of complicated acts precisely as though he were awake, but without the slightest consciousness of what he is doing. Nay, in many cases there is a positive increase of his sensory and motor powers, so that he is able to do much that is quite beyond him in the waking state.

Thus, to give an instance or two from the many vouched for by trustworthy observers, a young woman, a patient at the Birmingham (England) General Hospital in August, 1907, sat up in bed one night and began to work on a piece of crocheting. Her room at the time was so dark that her nurse had to come close to her bed to see what she was doing. Yet she crocheted rapidly and accurately, and all the while remained in a deep sleep.

The nurse now summoned one of the hospital physicians, Doctor Hincks, and together they watched the patient, who, after crocheting some minutes longer, laid the fancy-work aside, left her bed, took paper and pencil from a locker, wrote a letter, and put it into an envelope, which she addressed to her brother.

"She then," said Doctor Hincks, in reporting the affair to the patient's personal physician, Doctor J. W. Russell, "took the

letter and walked toward the door. The nurse and I followed her, but she took no notice of us, although we carried a lamp. As she was going out of the door I took her arm and led her back to bed.

"She came very quietly, but after getting into bed she became very excited. After coming to herself I showed her the letter. She did not remember having written it, but recognized the address as correct and the writing as her own."

Doctor Hincks then gave her a piece of paper and a pencil and asked her to rewrite her brother's address. At the same time he removed the lamp, so that she would have no more light than when previously writing. Now she was able to produce only an illegible scrawl, making it evident that during sleep her eyesight had been abnormally acute.[1]

Compare with this, one of numerous

[1] This case is reported in detail in *The British Medical Journal*, March 14, 1908.

singular episodes in the career of a somnambulic clergyman:

"One night, in the middle of winter, he dreamed that he was walking on the bank of a river, and saw a child fall into the water. The severity of the cold did not hinder him from hurrying to the rescue. He threw himself at full length upon the bed, in the position of a man who is swimming, and imitated all his movements. After having fatigued himself for some time with this exercise, he felt a portion of the coverlet gathered in a heap on one corner of the bed. He believed this to be the child; grasped it in one hand, and with the other went through the motions of swimming back to the bank of the supposed river.

"There he laid down his burden, and came out, shivering and chattering his teeth as if he were really getting out of an icy river. To the bystanders he said that he was freezing, and would die of cold, that his

blood was all turned to ice; he must have a glass of brandy to warm him. Not having any, they gave him some water which chanced to be in the room; he tasted it, recognized the deception, and called with greater emphasis than before, for brandy, insisting upon the magnitude of the danger which threatened his health. A glass of liquor was finally given to him; he drank it with pleasure, and spoke of the great relief which it afforded him. Notwithstanding all these incidents he did not wake."[1]

Nocturnal adventures like these are not always so harmless; sometimes the somnambulist sustains severe injuries through a fall, sometimes he inflicts severe, perhaps fatal, injuries on others. People in somnambulic attacks have been known to kill their dearest relatives, under a dream-impression that some great danger was threatening. In one case a Scotsman,

[1] P. M. Simon's "Le Monde des Rêves," translation by H. M. Lyman.

Simon Fraser, a resident of Edinburgh, leaped out of bed, picked up his infant son, asleep in a crib, and dashed him to death against a wall of the room before his wife could interfere. Put on trial for murder, Fraser testified:

"I had a frightful dream. I thought I saw a wild beast come through the floor and spring to attack the boy. I thought I got to the crib in time to save him and kill the beast. I am guilty in my sleep, but not in my senses."

These three instances admirably illustrate certain features of somnambulism which have led within recent years to a better understanding of its nature. It is always, as the second and third instances suggest, the putting of a dream into action; and, as in the first instance, it is characterized by distinctive exaltations and limitations of faculty. There is invariably a marked unconsciousness for everything not directly fitting into the dream the somnam-

bulist is enacting. He is strangely deaf, he seems not to see other persons in the room with him, he is totally unaffected by stimuli to which he would ordinarily react instantly and vigorously.

Now, this puzzling state is not only characteristic of somnambulism; it is characteristic of a specific malady, hysteria. Precisely the same abnormal concentration on one idea and oblivion for everything not connected with it, is found in the case of hysterical patients. In the latter it is known to be the result of an extreme suggestibility, which has allowed the mind to be overborne by emotional shocks — griefs, worries, frights, etc. Further it is known with regard to hysteria that these emotional shocks would not suffice to provoke disease-symptoms, even in a suggestible mind, were they not linked to previous unpleasant experiences, dating back perhaps to childhood, which have been as it were incubating in the hysterical's subconsciousness.

The same view is now held by the medical psychologist concerning somnambulism. To him it is a species of hysteria, and is indicative of the presence of disquieting subconscious ideas. Its occurrence in early life — when it is particularly likely to occur — is regarded by him as a real danger-signal, pointing both to a general undue impressionability and to specific defects in the young somnambulist's upbringing that have unfavorably influenced the current of his thoughts.

Sometimes, indeed, somnambulism is followed by symptoms in the waking state of an unmistakably hysterical character. An interesting case in point is reported by the French medical psychologist, Doctor Pierre Janet. It relates to a young girl afflicted with a curious and ceaseless turning movement of the right hand, and an accompanying raising and lowering of the right foot.

Her parents informed the physician to

whom they took her that this odd disorder had set in following a period of unrest at night, when she had tumbled and tossed in her sleep and kept repeating: "I must work, I must work." The girl herself could throw no light on the cause of her malady and claimed to be ignorant of the significance of the phrase, "I must work." When hypnotized, however, she readily re-called the circumstances under which she began to move her hand and foot in this strange way.

"My trouble started," she said, "after I overheard my parents talking one evening about our terrible poverty and the difficulty they had to get together enough money to pay the quarter's rent. That night I dreamed I was hard at work at my regular trade, trying to earn as much as I could to help them. The next night I had the same dream, and the night after that; and I have been having it ever since."

"Indeed," her physician commented.

"And what, may I ask, is your regular trade?"

"I make dolls' eyes."

"That is certainly a singular trade. How do you make them?"

"With a lathe, which I work by treading a pedal with my foot, while I turn a wheel with my hand."

No more questions were necessary. Here, the physician realized, was a girl of sensitive disposition, emotional, nervously unstable, evidently brought up in an atmosphere of poverty, anxiety, and fear, who had had her attention suddenly and vividly fixed on the struggles and self-denials of her parents. The revelation had been too much for her. She had shrunk from it, had sought to forget it, and had actually done so, as far as conscious recollection was concerned.

But deep down in her mind it had remained with her, to torment her and to dominate, at first her sleeping, afterward

her waking life, finding expression in the symbolic movements of hand and foot. The indispensable thing, from the therapeutic point of view, was to uproot this "ingrowing" memory, to deprive it, by appropriate "suggestions," of its power to harm; and this was what her physician now proceeded to do.[1]

The hysteria of the ordinary somnambulist is not so clear-cut as this. But it is equally grounded in subconscious emotional states, and in its treatment the aim must be to offset these by general suggestive treatment; or, when necessary, to ascertain and allay by psychological analysis the specific ideas that are acting as causal agencies. Dieting and sedatives may be of some help, but only in a secondary way. The important thing is the "psychic re-education" of the patient, by "suggestion" and by the cultivation of

[1] This case is reported in Doctor Janet's "The Major Symptoms of Hysteria," pp. 127–128.

such traits as courage, calmness, and strength of will.

In this connection, as in the case of "night terrors," a great responsibility rests with parents. If a child, as a regular thing, begins to be restless in his sleep, talks to himself, or leaves his bed and wanders about the room while still asleep, there should be no delay in endeavoring to discover the cause of his uneasiness, which will usually be found to have its inception in some unpleasant experience or experiences of his waking life. If the parent, neither by personal observation nor by close questioning of the child, can learn for himself the origin of the somnambulism, his next and imperative move should be to place the little one in the care of a psychologically trained physician.

Best of all, it goes without saying, is for parents, from the outset of their children's lives, to guard them as far as possible from undue emotional shocks, while at the

same time developing their will-power and turning their thoughts to interests so absorbing that they will have neither time nor inclination to become morbidly self-centered.

Chapter V

The Causes of Sleeplessness

WRITING nearly fifty years ago, the New York neurologist, Doctor W. A. Hammond, called attention to the prevalence of insomnia as a product of the increasing refinements and complexities of civilization and lamented the backwardness of mankind in taking proper precautions to insure the regular functioning of sleep in the new conditions of life. The inference was that sleeplessness is in most cases a preventible malady, and that almost everybody has it in his power to determine whether he shall sleep well or badly. Yet the half century that has intervened since Doctor Hammond wrote has seemingly invalidated this optimistic view. Insomnia still is so much

in evidence that a modern observer can truthfully declare:

"Great numbers of people in our modern life of high nervous tension are victims of insomnia — more now than ever before, and the number is apparently increasing rapidly in certain communities. Drugs to produce sleep were never in such demand, were never used so freely, both as a temporary expedient and as a daily habit."[1]

What is the significance of this? Does it mean that Hammond was wrong, and that insomnia is, as many believe, one of the unescapable penalties of civilization? Or does it signify merely that the world still is full of people who fail to observe certain laws which, being duly heeded, would save them from recurrent or chronic sleeplessness?

Undoubtedly the facts warrant the latter interpretation. Undoubtedly, too, it is not

[1] Doctor Norman Bridge, in a paper read before the Association of American Physicians, Washington, May, 1906.

surprising that people in general still ignore the laws that make for sound and refreshing sleep and fall into errors that bring on them the curse of insomnia. For the truth is that only within recent years have the laws of sleep and the causes of insomnia been clearly understood even by medical men.

Certainly they were not understood by the physicians of Hammond's day, or by Hammond himself, as is evident from a perusal of his book, "Sleep and Its Derangements," with its emphasis on physical factors in the causation of sleeplessness. This same emphasis on the physical has been, until quite lately, characteristic of all medical treatises on the subject. Whereas, recent investigation has amply demonstrated, nothing can be more certain than that in the great majority of instances mental rather than physical factors are responsible for persistent failure in the regular functioning of sleep.

This is not to deny that physical factors are always operant in some degree, and that in a certain proportion of cases the mental element does not enter at all as a causal agent. Some forms of brain disease, for example, are attended in their early stages by persistent insomnia. Any acute pain from local inflammation — toothache, earache, headache, fractures, wounds, rheumatic pains, etc. — may be an efficient cause of sleeplessness. So may organic disease of the heart, lungs, stomach, liver, and kidneys. Disease of these organs influences sleep adversely, either through causing discomfort or positive pain, or by preventing proper elimination of the products of the bodily processes, and thus leaving the blood charged with poisonous substances that irritate the brain to wakefulness.

Toxic irritation resulting in insomnia may also be caused by the action of various poisons (lead, arsenic, etc.), of intoxicating

liquors, or even of such seemingly harmless beverages as tea and coffee. To all insomniacs who indulge freely in tea or coffee I commend these observations by one of the most competent present-day authorities on the causes and treatment of sleeplessness:

"Every physician has frequent experience of people who complain of insomnia, yet who take a cup of coffee late at night. A large proportion of humanity cannot do this with impunity and expect to go to sleep promptly. Occasionally one finds that persons complaining of sleeplessness are taking three to five cups of coffee a day. This must be stopped.

"A physician may be told by such patients that they cannot get along without their coffee. I have one answer for this, and it is meant to show patients that if they want to sleep they must take the means to secure it, and, above all, must remove all disturbing factors. I tell them

that if they cannot do without coffee they must continue to do without sleep. If they want to sleep they must give up coffee, or at least limit its amount.

"I have found it comparatively easy to get people to limit coffee-taking by the suggestion that there should be one tablespoonful of strong coffee taken to a cup of hot milk. This gives the taste, or rather the aroma of coffee, for coffee properly has no taste to speak of; and while, at first, patients crave the stimulation they have been accustomed to, it takes but a few days to overcome this craving entirely.

"Usually it is easy to get people to confess that they are taking too much coffee. For some reason not easy to understand it is harder to get them to acknowledge that they are taking too much tea. Coffee is taken with a certain amount of deliberation. Tea may be, and often is, taken at odd intervals for friendliness' sake, and sometimes patients do not know how much

they are taking. Six or seven cups a day may be their usual quota, yet they do not realize it, and at first are inclined to answer that they take it only two or three times a day, forgetting the little potations between meals. Tea is not so prone to cause wakefulness as coffee, yet the toxic irritant principle in both is the same, and when the amount of tea and its strength are sufficient the same results follow. The tea habit must always be given up if there is complaint of lack of sleep, especially early in the night."[1]

Other physical factors which in certain cases have a causal force in the production of chronic sleeplessness are impure air in the bedroom, and an excess of heat or cold. There are some people who contrive to sleep well enough with their windows closed throughout the night, and their beds heaped with many thicknesses of blankets. But most of us need fresh air by night as

[1] James J. Walsh's "Psychotherapy," p. 659.

well as by day, and there are comparatively few who sleep really well if the bedclothes are too abundant. On the other hand, a scantiness of coverings may be equally fatal to sleep. "Over and over again," notes the observant Doctor Walsh, "I have found that patients who complain of wakefulness, in the latter part of the night particularly — that is, in the early morning — were awakened by the increasing cold because they were insufficiently clothed." And he promptly adds, calling attention to another common physical cause of wakefulness:

"A large number of people have their sleep at the beginning of the night seriously disturbed by cold feet. Some cannot get to sleep for an hour or more, because their feet are cold. If the patients become worried over this loss of sleep, a real insomnia may develop. It is for these people that the old-fashioned warming-pan was invented, and it should not be forgotten

that the symptom can be relieved very promptly by means of a hot-water bag or a hot brick wrapped in flannel at the foot of the bed. An excellent practice for very sensitive persons is to have the sheets warmed thoroughly for a couple of hours before bed-time. This is especially important in damp weather."[1]

In this passage occurs a sentence which brings us directly to the central fact in the whole problem of insomnia, indicating as it does the true relationship between the physical factors above enumerated and the supremely important mental element in the making of most insomniacs. "If the patients," says Doctor Walsh, "become worried over this loss of sleep, a real insomnia may develop." Applied by him to the wakefulness caused by cold feet, it might be applied with fully as much force to the wakefulness provoked by almost any other physical factor. Without exag-

[1] "Psychotherapy," pp. 656–657.

geration it may be affirmed that for every case of insomnia caused directly and solely by some untoward bodily condition, there are nine cases in which bodily conditions play only an indirect and secondary part. They may for the moment exercise an appreciable, even dominant, influence in the disturbing of sleep; but it is in the mental states to which they give rise that the real explanation of the resultant insomnia is to be sought.

A man has a few "bad nights," caused, let us say, by some digestive disturbance, by over-indulgence in coffee, or by smoking a cigar too many. If he make light of this loss of sleep, little harm is done. His wakefulness will cease troubling him as soon as he takes the necessary hygienic precautions. But if, as so often happens, he become alarmed over his temporary inability to sleep, not recognizing its true cause; and still more, if he picture to himself the disastrous results commonly attributed to in-

somnia, he is in a fair way to make it impossible for him to sleep under any conditions with soundness and regularity.

"Insomnophobia," or fear of insomnia, is in truth one of the most frequent causes of chronic sleeplessness. It is also one of the most irrational of its causes. Loss of sleep is not in itself the terrible evil that most people imagine it to be. For one thing, as I pointed out when discussing the nature of sleep, there are many persons who get along very well sleeping only from four to five hours a night. And, secondly, even when sleep does not come, there are sure to be momentary dozings that have singularly rest-giving qualities.

"But," some unfortunate insomniac protests, "I never even doze. I lie awake night after night, the whole night long." That may be your honest impression; nevertheless it is certain that you are mistaken. Total failure to sleep, for a period of only a few days, would bring one

to the verge of insanity. Few are the cases of complete insomnia on record, and all of them have speedily terminated in death. On the other hand, nearly every insomniac obtains a greater amount of real, if broken, sleep than he or she is aware; or, at all events, of the dozing, borderland, "hypnoidal" state midway between sleeping and waking.

How true this is, and how really restful the borderland state may be, was impressively brought out by the Patrick-Gilbert experiments in sleep, to which reference was made in the opening chapter. In these experiments, it will be recalled, Professor Patrick and Doctor Gilbert sought to ascertain the effects of protracted loss of sleep by keeping three members of the teaching staff of the University of Iowa continuously awake for about ninety hours, making physiological and psychological tests on them at intervals of six hours, in respect to motor ability, memory, attention-power,

and so forth. Some exceedingly peculiar and interesting results were obtained, not the least important being proof that at times when the subjects of the experiments seemed quite awake, and believed themselves to be awake, they were in reality in a semi-sleeping state. This was demonstrated by the nature of their responses, some of which showed unmistakably that they had been dreaming.

And that these occasional unnoticed lapses from full wakefulness served well to take the place of true sleep was clearly indicated by the ease with which the three subjects recovered from the severe test to which they had been put, and by their behavior during the experiments. Only one of the three was at all seriously affected. During the second night of the enforced vigilance he suffered much from sleepiness, and complained of some hallucinations of sight — declaring that the air was full of red, purple, and black particles like gnats.

However, these hallucinations entirely disappeared after a sleep of ten and a half hours, when he awoke feeling quite refreshed and as well as ever. The next night he slept two hours longer than was usual with him. This was all the extra sleep he required to make up for that which he had lost while the experiments were in progress.

Neither of his companions experienced hallucinations of any kind; and though they found it hard to keep awake during the experiment-period, neither complained of any severe suffering or discomfort. After the experiments both slept for about twelve hours, then awoke fully refreshed. They took no extra sleep the following night.[1]

These results, together with confirmatory observations reported by other experimenters in voluntary sleeplessness, justify the statement that while true sleep is necessary

[1] For a detailed report of these experiments see *The Psychological Review*, vol. III, pp. 469–483.

to the human organism, Nature provides through the semi-sleeping state a mechanism which, in nearly every case, operates automatically as a partial substitute for sleep, to ward off the destructive effects of total sleeplessness. But because people generally do not appreciate this, and because the evils of insomnia have been so luridly impressed on the popular consciousness, there is a tendency, especially among persons of the so-called nervous temperament, to fall into a panic if for any reason they fail for a few successive nights to sleep with their wonted soundness.

From this sentiment of fear, this anxious dread lest they become victims of the demon insomnia, it is an easy step to the development of a "fixed idea," conscious or subconscious, that they cannot possibly sleep as well as they used to do. This idea is naturally intensified by the fact that, simply because they try desperately to fall asleep, they maintain a strained, tense

state of the attention that is in itself fatal to sleep. Thus they "prove," to their increasing dismay, that insomnia veritably has them in its clutch, and accordingly they become more and more obsessed with the delusion that sleep will henceforth be impossible to them. Actually, their persistent wakefulness is due to nothing but their faulty state of mind.

Sometimes, again, insomnia originates not from fear of sleeplessness but from fear of sleep — or, to be exact, from fear of the dreams that may come during sleep. Sufferers from nightmare have been known to cultivate a wakefulness that develops into an obstinate case of insomnia. Any terrifying recurrent dream, in fact, may act as an efficient cause of insomnia in supersensitive persons, as is indicated by a strange case coming under the observation of Doctor Pierre Janet.

The patient in this case, when first seen by Janet, claimed that she had not slept

for two years, despite incessant resort to drugs. Watching her carefully for several nights, Janet himself felt inclined to credit her statement, so far as true sleep was concerned. But he noticed she would frequently lapse into the drowsy, dozing, "hypnoidal" condition that, as was just said, serves on occasion as a sleep-substitute.

Janet also noticed, however, that she never remained in this condition more than a few moments at a time, and always passed from it into complete wakefulness with a start of terror. One day, after she had become drowsy, he asked her:

"Is there anything that troubles you so that you cannot go to sleep?"

"Yes, yes," she eagerly answered. "It is my child — it is the face of my dead child. I always see it in my sleep — always — and it terrifies me."

The next instant she was wide awake. In answer to the questions Janet now put to her, she told him that shortly after the

death of her child she had had a bad attack of typhoid fever, and during convalescence had been greatly troubled by visions of her lost little one as it looked in its last moments. It was immediately after this that her insomnia developed, the result, as Doctor Janet felt certain — and as the outcome of his psychotherapeutic treatment verified — of the formation of a "fixed idea" that if she went to sleep she would unfailingly have the same distressing dream.[1]

For that matter, any sudden emotional shock may be a cause of insomnia. In his book "Abnormal Psychology," Doctor I. H. Coriat cites the case of a patient who became greatly frightened by an insane woman entering her store and throwing an entire box of lighted matches among some paper. A week later the patient, previously a sound sleeper, developed an

[1] For details of this case see Pierre Janet's "*Névroses et Idées Fixes*," vol. I, pp. 354–374.

insomnia which continued for five years up to the time she came under neurological observation. What happened in her case probably was that, brooding over this alarming incident, she had lain awake a few nights thinking of it, and had then begun to fret not so much about it as about the sleeplessness it had occasioned. Thence, all unconsciously, she allowed her mind to become obsessed with the idea that sleep had deserted her forever.

Worry over anything, indeed, is likely to form the starting-point for an insomnia habit; and modern authorities are coming more and more to the belief that worry is more frequently responsible than any other single cause for occasional and chronic sleeplessness. In most cases, too, the worry provocative of sleeplessness is concerned not with physical but with psychic ills; so that it is possible to add that the man who takes his daily cares to bed with him is pre-eminently the man who cannot sleep.

With lamentable ease he may fall into the plight vividly described by the distinguished English physician, Sir James Sawyer, in one of his clinical lectures:

"Our patient may be a young professional man. He has commenced practice, or rather to wait for practice, as a barrister, a solicitor, a physician, or a surgeon. He begins to find that causes or cases have not been waiting for his advent; clients or patients are 'few and far between.' For a time he manfully struggles on, his hope and his health sustaining him; but these at last yield under the continued pressure of new disappointments and accumulating anxieties.

"He may want money; his friends will give it to him readily if he will ask for it, but his pride prevents him. It is not a gift or a loan he needs; he does not want to beg or to borrow money, he yearns to earn it. And while he has been hoping and waiting, and growing sick with the failure of his expectations, he has been work-

ing early and late in his exhausting studies — perhaps straining his powers in preparation for some higher examination, and, it may be, withal, adding the denial of due sleep and exercise, and so he has been wasting and wearing his psychical and physical energies in the trust that he might thus so skill himself the more as to secure the longed-for practice.

"At last he has fairly broken down. He has grown thinner; he looks haggard; he is filled with groundless fears; he is weighed down with the ineffable misery of insomnia; he has headache constantly, and noises in his ears; he thinks his memory is failing; he is dull and listless; he has been lying awake for hours after going to bed, or, waking in the 'small hours,' he has been unable to sleep again, and when he has slept he has had horrid dreams; and he comes to us for help because he can scarcely sleep at all, and he is possessed by the fear that he is going mad.

"His misery is urgent; it is the unspeakable misery of intrinsic insomnia."[1]

Every physician is familiar with cases closely paralleling this one, and of them all it may truly be said: "Worry did it." One physician, Doctor C. W. Saleeby, has termed worry "the disease of the age," and assuredly he finds some warrant for this bold generalization in the enormous number of cases of insomnia that may definitely be traced to worry. It is important to add that worry does not cause insomnia merely by reason of its disturbing influence on the mind; it may act through the production of physical disorders which are themselves potent sleep-breakers, and which would have been non-existent but for their victim's worrying habits.

In a general way, of course, it has long been known that all depressing emotions have an unfavorable effect on the bodily

[1] Lecture delivered at The Queen's Hospital, Birmingham, England, 1900.

processes; but until the past few years little effort has been made to ascertain with precision their specific effects. A number of exhaustive investigations, however, have now been carried out with this end in view, and with most informing results. Perhaps most important in the present connection is the light which these researches have thrown on the harmful consequences to the digestive and nutritional processes caused by such states as anger, fear, and worry.

Experimenting both on animals and on human beings in whom disease had caused openings in the body sufficient to permit study of its inner workings, it was found that whereas gastric secretion was promoted by pleasurable emotions it was hindered, or entirely stopped, by unpleasant ones. Even the showing of food to a hungry dog was sufficient to start a lively flow of gastric juice. But the arousing of any disturbing emotional state brought an al-

together different reaction. To quote from an excellent summary of the results of the various experiments, made public by one of the experimenters, Professor W. B. Cannon, of Harvard University:

"Not only is it true that normal secretion is favored by pleasurable sensations . . . but also that unpleasant feelings, such as vexation and some of the major emotions, are accompanied by a failure of secretion. Thus Hornborg was unable to confirm in his patient the observation of Pawlow that mere sight of food to a hungry subject causes the flow of gastric juice. Hornborg explains the difference between his and Pawlow's results by the difference in the reaction of the subjects to the situation. When food was shown but withheld, Pawlow's hungry dogs were all eagerness to secure it, and the juice began to flow at once. Hornborg's little boy, on the contrary, became vexed when he could not eat at once, and began to cry;

then no secretion appeared. Bogen also reports that his patient, a child, aged three and a half years, sometimes fell into such a passion in consequence of vain hoping for food, that the giving of the food, after calming the child, was not followed by any secretion of the gastric juice.

"The observations of Bickel and Sasaki confirm and define more precisely the inhibitory effects of violent emotion on gastric secretion. They studied these effects on a dog with an œsophageal fistula and with a side pouch of the stomach which, according to Pawlow's method, opened only to the exterior. . . . [One day] a cat was brought into the presence of the dog, whereupon the dog flew into a great fury. The cat was then removed, and the dog pacified. Now the dog was [fed] for five minutes. In spite of the fact that the animal was hungry and ate eagerly, there was no secretion worthy of mention. During a period of twenty min-

utes . . . only 9 c.c. of acid fluid was produced, and this was rich in mucus. It is evident that in the dog, as in the boy observed by Bogen, strong emotions can so profoundly disarrange the mechanisms of secretion that the natural nervous agitation accompanying the taking of food cannot cause the normal flow.

"On another occasion Bickel and Sasaki started gastric secretion in the dog by sham feeding, and when the flow of gastric juice had reached a certain height the dog was infuriated for five minutes by the presence of the cat. During the next fifteen minutes there appeared only a few drops of a very mucous secretion. Evidently in this instance a physiological process, started as an accompaniment of a psychic state quietly pleasurable in character, was almost entirely stopped by another psychic state violent in character.

"It is noteworthy that in both the positive and negative results of the emotional

excitement illustrated in Bickel and Sasaki's dog the effects persisted long after the removal of the exciting condition. This fact Bickel was able to confirm in a girl with œsophageal and gastric fistulas; the gastric secretion long outlasted the period of eating, although no food entered the stomach. The importance of these observations to personal economies is too obvious to require elaboration.

"Not only are the secreting activities of the stomach unfavorably affected by strong emotions; the movements of the stomach as well, and, indeed, the movements of almost the entire alimentary canal, are wholly stopped during excitement."[1]

Such findings leave no room for doubt that chronic indigestion and similar ills may be, and often are, caused in perfectly healthy individuals by persistent indulgence in the disturbing emotional state

[1] W. B. Cannon, in *American Journal of the Medical Sciences*, April, 1909.

represented by worry. But these physical troubles are among the well-recognized causes of insomnia, and consequently whenever they are due to worry it is really the worry that is responsible for the resultant sleeplessness. This fact has to be kept in mind when it is a question of treating any given case of insomnia complicated by physical troubles which are demonstrably not based in true disease of the bodily organs.

Further, it is equally true that under certain conditions pleasurable as well as unpleasant emotions may interfere with sleep. In my opening chapter I laid stress on the fact that interest — which usually is wholly pleasurable — seems to possess the peculiar quality of enabling one to get along very well with less than the average amount of sleep. That it does so would appear to be due to the fact that though the keenly interested man may devote fewer hours to sleep, he sleeps more "in-

tensely" than his less interested fellow. Consciously or unconsciously, that is to say, he has cultivated a sleep habit which compensates qualitatively for what is lacking quantitatively.

But, now, suppose that a person who has not habituated himself to a short sleeping-period, and lacks the short-sleeper's ability to "close up shop" mentally the moment his head touches the pillow, happens to become unusually interested in something during the evening hours. Is it not reasonable to expect that this exceptional interest will make for wakefulness, and that by the time he goes to bed he will be so excited mentally that he will find it difficult to sleep? This is exactly what does occur, particularly in the case of people of an "emotional" temperament.

An evening at the theatre or opera, if one is not a regular attendant at theatre or opera, or is unduly susceptible to the emotional appeal of the play or the music,

may mean a sleepless night. The same result may follow an evening spent in reading a too exciting novel; or in engaging in any discussion that works the mind up to a high pitch. In short, mental excitement of any sort is a detriment to sleep, and is recognized as such by all competent physicians. Almost everybody, therefore, could profit from this bit of advice addressed more particularly to "nervous patients" by Doctor Oppenheim, of Berlin:

"A great deal depends upon the right use of the evening hours. On no account let yourself occupy them with anxious forebodings about the night. But, on the other hand, it is not wise to take up your mind with too exciting thoughts, as the strong after-impression of feeling and fancy may counteract the tendency to sleep. You must find out for yourself whether a quiet game (cards, halma, chess, or patience), the reading of a serious or an amusing book, the perusal of an illustrated

paper, or a chat with a friend will be most certain to give you that tranquillity of mind through the vestibule of which you will pass into the temple of sleep."

Still, as in sleeplessness caused by temporary physical disturbances, little harm is done by the occasional loss of a night's rest as a result of mental excitement, provided there be no great fuming and fretting over the inability to sleep. It cannot be too often or too strongly said that it is here the real danger lies. Fuming and fretting, and above all dreading lest the wakefulness become habitual, are the surest ways to make it habitual. For they lead to the conviction that one cannot sleep, and when one has come to this belief then indeed sleep is effectually banished.

To sum up: There are many causes for insomnia, some physical, some psychical. It is only in a comparatively few cases that the cause is wholly physical. In most cases the physical factors are second-

ary to the psychical, so far as true causation is concerned. In many cases the physical factors are themselves created by the psychical. So that it is entirely true to say of the average insomniac that the real trouble with him is nothing more than a bad habit of mind.

Chapter VI

The Treatment of Sleeplessness

FROM the foregoing it should be evident that any treatment of insomnia which places its main reliance in the use of drugs is foredoomed to failure. Some students of the insomnia problem would go even further, and say that, so far as regards the actual cure of sleeplessness, drugs used specifically for that purpose always do more harm than good. At all events, it is the consensus of the most authoritative opinion that drugs should be used only when it is indispensable to bring about immediate unconsciousness as a relief from physical pain or the shock of some great bereavement.

This of itself suggests one of the great shortcomings of the so-called "narcotics,"

or "sleeping-drugs." What they produce is always unconsciousness, not natural sleep, an altogether different matter. "The effect of narcotics," Marie de Manacéïne pointed out nearly twenty years ago, "only resembles sleep by producing a temporary interruption of consciousness. At this point the resemblance ceases." More elaborately, Mortimer-Granville, writing still earlier, specifies:

"It should be remembered that these remedies are capable of destroying life, and it is only by the exercise of their poisonous properties in a low degree that they produce the results for which they are given. The action is destructive to life, and the only reason they do not kill is that we do not take enough of them. The state they produce is not sleep, but a condition of narcotism that counterfeits sleep. When a man says: 'I want a quiet night; I will take a sleeping-draught,' he speaks in parables. To express the fact plainly, he

should say: 'I want a quiet night; I cannot obtain it by going to sleep, or I am afraid to trust to the chances of natural rest, so I will poison myself a little, just enough to make me unconscious, or slightly paralyze my nerve centres, not enough to kill.' "[1]

To be sure, it often happens that a drug-induced unconsciousness passes over into a state of natural sleep; and this fact is responsible for the recklessness with which many physicians still prescribe drugs to patients who complain of inability to sleep. But it also happens that once the practice of taking drugs is started, there is a gradually increasing tendency to resort to them at the least sign of wakefulness, until at last the insomnia habit is replaced by a still more disastrous drug habit. Indeed, to be quite accurate, the drug habit is superimposed on the insomnia habit; for it is a matter of common observation that,

[1] J. Mortimer-Granville's "Sleep and Sleeplessness," pp. 29–30.

in the course of time, those addicted to the use of narcotics find it increasingly difficult to go to sleep, despite a steady increase in the quantity of the drug daily taken by them.

It is a lamentably frequent experience both of specialists and of general practitioners, to have patients come to them with the agonizing plea:

"For God's sake, doctor, show me how to sleep. I have drugged myself nearly to death, but I am no better off than I was before. Indeed, I am worse off, as I have reached a point where I cannot sleep without a drug, and even with one I sleep badly. You must do something for me, and do it without delay."

Accordingly, among present-day leaders in the medical profession, few will be found dissenting from the view recently set forth in one of the most important medical periodicals in this country by Doctor Arthur S. Risser:

"My watchword is 'Avoid narcotics!' . . . If drugs are deemed necessary, their suggestive action must be made use of to enhance and to prolong their effects. But drugs are only palliative. They cannot cure. They should never be used for any length of time, and as it is especially difficult to prevent these patients from becoming drug habitués, it is usually wiser to dispense entirely with their use."[1]

But if narcotics are to be dispensed with, how, then, should one proceed in the treatment of chronic sleeplessness? The answer is, for the vast majority of insomniacs, by psychological rather than medicinal methods, plus the enforcement of certain hygienic and dietetic precautions. Medicinal treatment, as a matter of fact, is imperative only when the insomnia is found to be primarily due to diseased bodily conditions that require medicine for their cure or amelioration. In all other cases,

[1] *New York Medical Journal*, vol. XCVIII, p. 872.

since the sleeplessness is really symptomatic of a wrong mental attitude, the essential thing is to develop a new and healthier frame of mind. This can be done in only one way — through some form of "treatment by suggestion."

The great need, of course, is to break down the insomniac's "fixed idea" that he cannot sleep. In many cases this may be done by the simple process of hypnotizing him, impressing upon him during hypnosis the suggestion: "To-night you are going to sleep soundly," and allowing the automatic execution of this post-hypnotic command to demonstrate to him the groundlessness of his belief that sleep is beyond his power. Recent medical literature abounds in instances in which this easy procedure has resulted in curing more or less protracted insomnia. Here a single illustrative case must suffice, reported by Doctor Frederic H. Gerrish, of Portland, Maine, a former president of the American Therapeutic Society:

"A great affliction, prolonged overwork, and anxiety had so affected a man of thirty-five years that his capacity for sleep was seriously reduced. For three months he had slept only two or three hours in the twenty-four, and not only felt ill, but looked haggard and worn. A single hypnotic treatment refreshed him greatly. He was instructed to come daily for a while, as the case was chronic and severe; but a month went by without my seeing him. Then at a chance meeting he was asked to give an account of himself — why he had not come oftener, as he had promised. He joyously replied: 'What's the use of going to a doctor when one is perfectly well? I slept like a log all that night, and I've slept like a log every night since.' Many years have passed, and he has had no recurrence of insomnia."[1]

Similar results, though by no means

[1] From a paper read by Doctor Gerrish at the May, 1909, meeting of the American Therapeutic Society.

always achieved so rapidly, are reported by hypnotism-using physicians in all lands. Also, however, these physicians find themselves obliged to report that hypnotism is far from being a specific for insomnia. For one thing, a certain proportion of patients prove to be unhypnotizable; and even among those easily hypnotized there are not a few in whom the post-hypnotic command to sleep fails to take effect. Moreover, most insomniacs entertain a stubborn prejudice against hypnotism, believing, though without real warrant, that it "is weakening to their will-power" and "places them at the mercy of the hypnotist." Finally, although cures by hypnotism may be, and usually are, lasting, there is no guarantee that they will be; for the mere command to sleep does not enlighten the patient as to the factors which have operated to prevent him from sleeping; and, lacking this enlightenment, he may in time relapse into insomnia.

For these reasons, although hypnotism probably and rightly will always be utilized as a therapeutic agent in the treatment of sleeplessness, there is a growing tendency among those who specialize in this field, to attack insomnia by employing suggestion not in the hypnotic but in the waking state. Incredible as it may seem, there are many insomniacs to whom sleep comes without any difficulty after the practitioner has merely assured them, authoritatively and with honest conviction, that they can and will sleep. They accept and act on this suggestion with as much readiness as though it were imparted to them during hypnosis.

In one striking case, treated by Doctor James F. Fisher, Professor of Nervous and Mental Diseases, College of Physicians and Surgeons, Los Angeles, California, the patient was a retired army officer, who had been suffering from insomnia for years. His wife told Doctor Fisher that he "had taken tons of hypnotics and had tried

everything, but was only getting worse and becoming a physical wreck." He took dram doses of sulphonal, and even then did not obtain more than three hours' sleep. Nevertheless in less than five weeks Doctor Fisher had him sleeping eight hours a night.

"For ten days," Doctor Fisher states, "his only treatment consisted in daily visits to my office, where he was assured that each night he would sleep better than the night before, and would soon be able to return to his home. My instructions were to go to bed at nine o'clock, to shut the eyes, and to play he was asleep, and though he felt wide-awake to lie perfectly still by force of will-power. Each day or two he admitted that he was getting control over his insomnia."[1]

Experience has taught, however, that in many cases it is desirable, not simply to assure the patient that he can sleep, but

[1] *Journal of the American Medical Association*, 1906.

to prove it to him by actually putting him to sleep. This is one of the great values of hypnotism as a curative agent in insomnia, for it is essentially a process of putting to sleep. But if the patient cannot or will not be hypnotized, or if for any reason the use of hypnotism in his case is not deemed advisable, there is now available another process which attains the desired end. It consists in impressing on the patient strongly the idea that he can sleep, while at the same time subjecting him to the conditions requisite to bring on the hypnoidal, or semi-sleeping state. This may best be done by employing the method devised by Doctor Sidis, as quoted by me on a previous page. Let me, for convenience' sake, describe it again in Doctor Sidis's words:

"The patient is asked to close his eyes and keep as quiet as possible, without, however, making any special effort to put himself in such a state. He is then asked

to attend to some stimulus, such as reading or singing, or to the monotonous beats of a metronome. Or he may be asked to fixate his attention on some object, while at the same time listening to the beats of the metronome. His eyes are then closed, he is to keep very quiet, while the metronome or some other monotonous stimulus is continued."

In effect, what happens under these conditions is not only that the patient becomes drowsy, but that his suggestibility is greatly increased; so that even if he does not automatically pass from the semi-sleeping state thus induced into a state of deep sleep, he is pretty sure to do so in response to the suggestions of the practitioner. This is the experience of all who make use of Doctor Sidis's method.

It has been used on a particularly wide scale, and with most beneficial results, at the medical clinic connected with Emmanuel Church in Boston. The director of this

clinic, Doctor Samuel McComb, assures me that this method practically never fails to induce sound sleep in the patients to whom he applies it. This even when they come to him expressing absolute skepticism in the possibility of their obtaining sleep by any means.

Rather more than a year ago, for example, there appeared at the clinic a young woman, an artist, who complained that for upward of six months she had scarcely slept. So far as she could tell there was no ascertainable cause for her sleeplessness. She had consulted several physicians, all of whom had pronounced her free of any organic disease that might have insomnia as one of its symptoms; she had suffered no severe shock, and she had nothing particular about which to worry. Nevertheless, in spite of the fact that she had made liberal use of drugs, she could not sleep as she had formerly been able to do.

Questioned closely she recalled that her

sleeplessness had begun after a somewhat strenuous working-period. It further appeared that she was of an intensely active mentality, and was forever thinking about her work, in the evenings as well as in the daytime, and even after she had gone to bed. Realizing that this chronic state of mental tension was enough to account for the inability to sleep, Doctor McComb had no hesitation in saying to her:

"Your insomnia can be cured, I can promise you that. In fact, you are going to fall asleep within the next few minutes."

"How absurd," was her incredulous exclamation. "I know I am going to do nothing of the sort."

Doctor McComb pointed to a deep, comfortable arm-chair.

"You see that chair?" he asked. "There is nothing magical about it, yet it is a strange thing that every sufferer from insomnia who has sat in that chair has enjoyed refreshing sleep before leaving it.

You may be the first one not to do so. I do not know. But if you are I shall be very much surprised, and shall look upon you as indeed a curiosity. Please sit in it, and let us see what will happen."

Once she was in the chair he started a metronome ticking, bade her close her eyes and sit quietly, and exhorted her to think of nothing in particular. These instructions given, he began talking to her in a low voice, assuring her of the certainty that she would fall asleep, and of her ability to sleep well at night in the future. Within ten minutes she really was asleep, and continued sleeping for half an hour. When she at last awoke it was to sit up in the chair, with the astonished cry:

"Why, I have been asleep! This is the most remarkable thing that ever happened to me. I truly thought I could never sleep again."

"On the contrary," Doctor McComb told her, "you are going to enjoy regular sleep

from now on, and without any effort to gain it. One trouble with you is that you have been trying for sleep too hard, and without the knowledge of the conditions requisite to sleep. But all that will be changed now."

Returning the next day, the young woman informed him that she had had her first night's rest since her insomnia began. After one or two additional treatments by suggestion, with explanation of the nature and laws of sleep, she ceased coming to him, because, as she stated when he chanced to meet her six months later, she was "completely cured."

Here, then, in hypnotic suggestion, in suggestion directly given in the fully waking state, and in suggestion administered during the hypnoidal condition, we have three efficacious modes of attacking all insomnia not connected with true organic disease. To insure their success, however, after-treatment is of the utmost importance.

This does not necessarily mean a long course of visits to the practitioner's office. What it does mean is that the patient must be instructed in and persuaded to apply to himself, the general principles governing sleep and any special precautionary measures indicated in his particular case.

In other words, whoever undertakes to treat insomnia should study each case individually, no matter what method of treatment by suggestion he may employ to demonstrate that the ability to sleep is not wholly lost. This for the reason that no case of insomnia is precisely like any other case. The preoccupations that may weigh on a patient's mind to disturb his sleep are innumerable; the dietetic or hygienic indiscretions that contribute to the formation of a bad sleep habit are likewise endless. Yet it is necessary for the conscientious physician to seek these out, in order that he may be in a position to remove any specific cause of wakefulness.

His patient may be one of those persons so constituted that tea or coffee has a peculiarly toxic, irritant effect on him; or he may be excessively addicted to the use of alcohol or tobacco, also detrimental to the sleep of some people. In this event, total or partial abstinence must be enjoined. The patient, again, may be partaking overfreely of certain foods not easily digested by everybody — as pastry, fried foods, etc.; or he may be underfeeding, a mistake equally serious. In this connection an observation by Doctor Walsh is much to the point:

"There is a very common persuasion that the eating of food in any quantity shortly before going to bed, and especially the eating of certain materials, will keep people awake. It is well known, however, that there are a great many people who can eat anything and sleep well after it, and young children sleep best when their stomachs are full. There are undoubtedly

idiosyncrasies in this matter that must be respected, but many patients are deceiving themselves. They are eating too little, and their wakefulness is more due to the mental state than to anything else.

"As this contradicts a very prevalent impression, I may say that it is said deliberately and only after much experience with people inclined to be oversolicitous about their diet and their health generally, and who were actually producing wakefulness — or at least very light, dreamful sleep — by their elimination from their diet, and especially from their evening meal, of many nutritious substances. I make it a rule to insist with patients that if it is more than five hours since their last meal they must take a glass of milk and some crackers, or a cup of cocoa and something to eat before going to bed. This is particularly important if they have been out in the air much between their last meal and bedtime."[1]

[1] "Psychotherapy," p. 659.

And of special interest to a numerous class of insomniacs is Doctor Walsh's additional statement:

"With regard to the disturbance of sleep in the early morning hours there are certain instructions to patients that have always seemed to me extremely important. Most of the patients who complain of wakefulness in the early morning hours are really suffering from hunger at that time. This is especially true with regard to those who stay up rather late at night. They have their last regular meal about seven or a little earlier, they get to bed at eleven or even later, and some of them, following the old maxim that eating before sleep is likely to disturb it, go to bed on an empty stomach. Whenever more than four hours have passed since the last meal the stomach is quite empty, and after the preliminary fatigue has worn off and the sleep has become lighter and the lack of nourishment more pronounced, a vague sense of discom-

fort in the abdominal region wakes them, though most of them do not realize that they are disturbed by a craving for food. In a large number of these cases I have found that the recommendation of a glass of milk and some crackers, or some simple cake, just before retiring does more than anything else to lengthen sleep and prevent what has been learnedly called matutinal vigilance."[1]

On the other hand, as Doctor Paul Dubois has pointed out, in his excellent work, "The Psychic Treatment of Nervous Disorders," the patient must not allow this or any similar expedient to become a fetish with him. "It is sometimes good," Doctor Dubois comments, "when insomnia is greatly prolonged, or when, on coming out of a nightmare, one cannot get hold of one's self, to get up for a moment and drink a glass of cold water and turn on the light; but one must avoid having recourse to these

[1] "Psychotherapy," p. 662.

measures too often, for one becomes a slave to them. I have seen patients obliged to have recourse to them continually. Some can never go to sleep unless they keep their night-light burning. Others cannot get along without their glass of water or glass of milk. . . . These patients are not cured of their insomnia; their preparations are subterfuges, useful if they are employed occasionally, but always troublesome if they become habitual."

This warning applies even to such salutary measures as the taking of a warm bath, or the warming of the bed with a hot-water bag, in the case of persons kept awake by cold feet. It does not apply, however, to hygienic precautions necessary to the general health as well as helpful in the treatment of insomnia. It is not a question of becoming a slave to a habit in taking pains, for instance, to have the bedroom well ventilated, and the bedcoverings proportionate to the atmosphere

of the room. Of course, exposure to draughts should be avoided, especially as the skin during sleep, in consequence of increased perspiration, is very sensitive to cold, and one is more easily chilled asleep than awake. Besides, any current of air blowing across the face is of itself likely to cause wakefulness, even from a sound sleep. But danger from this source can be readily avoided, either by screens, or by the use of some device fitting into the window-frame and shutting off any direct air-current while permitting ample ventilation.

As to the proper temperature of the room during sleep, most persons get along best in a room not warmer than 60° Fahrenheit. For children below the age of four or five, a higher temperature is advisable. Marie de Manacéïne recommends 75° Fahrenheit during the first days after birth; 74° to 72° Fahrenheit at the end of the first month; 70° to 68° Fahren-

heit at the end of the second month; 66° to 64° Fahrenheit at the end of the first year; and 64° to 60° Fahrenheit in the fourth year.

Nor does Doctor Dubois's warning apply to the self-utilization of the hypnoidal method of inducing sleep, for the excellent reason that this method tends of itself to form a sleep habit which makes its continued employment unnecessary. Indeed, among the various auxiliaries in the conquest of insomnia — and in its prevention — I know none which is more strongly to be recommended. Its value lies in the fact that when its basic conditions are complied with, it always "works," and it is so simple it can be used by anybody.

In making use of it after one has gone to bed, a soft-ticking clock, a watch, anything that produces a monotonous sound may be used instead of the metronome commonly employed by the specialists. A comfortable position should be chosen,

and — this is most important — the position having once been chosen, there should afterward be absolutely no shifting about in bed. Arms and legs, hands and feet, all must be kept motionless. And keep the eyes closed.

Soon, if these directions are faithfully observed, you will pass into the sleep-waking state. The "tic-tac, tic-tac" of the clock, watch, or metronome will sound strangely faint and remote to you. Next moment you may hear it distinctly again. Do not let this trouble you. The sleep-waking state is one of continual fluctuation between sleep and wakefulness.

Continue to lie quiet, to keep your mind passive. Again the "tic-tac, tic-tac" will sound remote to you; again you will hear it with almost irritating distinctness. Remain motionless. Presently you will hear it no more, for you will be asleep.

Or, if you are a person supersensitive to noise, you may with equal success employ,

not an auditory, but a visual stimulus. This is the method I prefer, and I find it of unfailing helpfulness. In applying it, after you have assumed a comfortable position, remain perfectly motionless as before, and select some spot on the bedroom wall — any fragmentary image which, by reason of a ray of light from the moon or other outside illuminant, stands out from the rest of the surroundings with special distinctness. Fix your gaze on this spot, not intently or with any straining of the attention, but with the eyes half open, in such a way that the spot appears to be far away and indistinct.

If you do this, if you lie perfectly still, and if you allow your mind to think only of the spot at which you are looking, your eyes will soon grow heavy and will close. The effort should then be made to open them and again gaze at the spot on the wall. Presently they will again close of themselves, and in a short time it will be

found impossible to open them, for you will no longer be awake.

Should the room be in absolute darkness, the same result may be obtained by visualizing to yourself some small object — a key, a bunch of grapes, a book, anything that comes into your mind — and by gazing at this imaginary object precisely as you would gaze at something real. Observe, however, that in employing this hypnoidal method it should not be used with the deliberate effort of "trying to go to sleep." To try to go to sleep is to prevent sleep from coming to you, for it means a maintenance of mental tension, and tension is the great foe of sleep. Consequently it is a salutary practice to cultivate the habit of both mental and physical relaxation at occasional intervals during the day. Let everything go for a few minutes; talk of nothing; think of nothing; do absolutely nothing; just close your eyes and rest.

But this is exactly what the insomniac finds it hardest to do; and because of his characteristic restlessness and uneasiness it usually is difficult indeed for him to apply the hypnoidal method effectively to his own case. The physician must recognize this; must appreciate that neither self-employment of the hypnoidal method nor the taking of hygienic and dietetic precautions will be of much avail, so long as the patient is handicapped by a faulty mental attitude. His mind must be changed before he can be cured. This is the absolutely imperative thing.

To effect the change, as indicated by the instances cited above, a single hypnotic or hypnoidal treatment will sometimes suffice. At the opposite extreme, it sometimes is necessary to call in the services of the skilled medical psychologist. The patient's mental preoccupation may not be with any conscious fear or dread, anxiety or grief. He may be tortured by some

"subconscious complex," some "forgotten memory," requiring deft psychological analysis for its recall and its dislodgment. More often, fortunately, simple persuasion will prove enough. And once it has been demonstrated to the patient, through hypnosis, hypnoidization, or direct suggestion in the waking state, that he still can sleep, he will usually listen to, and be profoundly influenced by, the practitioner's sage counsel.

Impress on him at the outset the supreme importance of banishing worry from his life, and in especial of henceforth never worrying about inability to sleep, should sleep occasionally be denied him. Point out to him the little damage that in itself loss of sleep really involves. Reiterate that it is always the worry that harms and kills. Call his attention, by illustrative anecdote, to the many dire effects that follow in worry's train, and the marvelous possibilities of self-cure through mastery over worry.

Here is one little tale from real life that you may find helpful to relate to your patient. It is an experience in the career of that pioneer psychotherapist Doctor Dubois. To Doctor Dubois there came one day a man about forty years old, of powerful build, tall and military-looking. His appearance corresponded with his profession, for he was, he explained, an officer in the regular army.

"But I very much fear," he added, "that unless you can do something for me, I shall have to resign my commission. Frankly, I have not the least idea what is the matter with me, and our surgeon confesses his inability to help me. He has given me a thorough overhauling and pronounces me organically sound. But I am far from well.

"I am tired all the time. Any sustained exertion uses me up completely. I cannot sleep, and when I do happen to doze off, I waken suddenly, a prey to an unknown

terror, my heart palpitating, my body drenched in perspiration. I have frequent headaches, with a sensation of gimlets boring into my temples. My back aches a good deal, and my legs trouble me also."

Re-examined physically by Doctor Dubois, the verdict of the army surgeon was confirmed. Nevertheless, the haggard, worn expression of the face, the bad color of the skin, the tremor of the hands, suggested that the patient was really in a serious condition. On Doctor Dubois's advice he secured an immediate leave of absence, and for two months took a "rest cure" treatment.

At the end of that time he was so improved in health that he was anxious to go back to his duties. Doctor Dubois consented, on one condition.

"You are a queer fellow," said he. "Here you have been steadily improving, but I notice that I had to drag out of you by direct questioning the admission that

any specific symptom was abated. If I had not asked you, we should have gone on talking about the weather.

"Do you know what that means? It means that you are not disposed to notice the pleasant things in life, and are disposed to look on the dark side. With this tendency you can make yourself sick every night, for every day things are certain to occur that will annoy and upset you.

"At present you are cured, but if you are to stay cured you must change your point of view. You can do it easily enough. This is what you must promise me. Every night, before you go to bed, sum up your day. Think of the things that have troubled you; then think of the things that have been favorable to you, and I believe the beam will tip more often to this side.

"The ills from which you have been suffering are due to one thing only — that you have had a false philosophy of life. Change that, and you will stay well."

Six months later Doctor Dubois received a photograph showing this officer on horseback, leaping over a high barrier. The photograph had written on it: "As well in the moral saddle as in the physical." Six years after this, physician and patient happened to meet again. Said the latter:

"Thanks to you, doctor, I now am always well. I seem to bear a charmed life. I have my motto: 'Don't worry — do your duty, come what may.' It has kept me in good health, and it certainly has not hurt my advancement, for you behold me lieutenant-colonel."

If you are sure that your patient does not belong to the class of organically diseased insomniacs — who form an exceedingly small percentage of the whole — you can honestly tell him that his plight is no worse than, if as bad as, this officer's was, and that he can cure himself in the same way. Make it very clear to him that the certainty of his cure depends chiefly on his

own efforts, and most of all on his ability to throw off the special worries and obsessions that beset him. To help him attain the needed placidity of mind, to help him "get away from himself," you may, if you please, encourage him in taking up some interesting hobby. The "hobby cure" is now a recognized form of treatment for nervous patients — and you may feel sure that your insomniac is a nervous patient. Also, it certainly will do no harm to advise him to seek the strength that comes from sincere religious faith and from prayer.

Do not smile at this suggestion. That prayer has a true therapeutic value is the belief not of "religious healers" only, but of foremost scientific and medical authorities. William James, the greatest psychologist that America has yet produced, has declared unreservedly that if any medical fact can be considered established, it is that prayer may often contribute to

restoration to health, and should be encouraged as a therapeutic measure. Doctor Richard C. Cabot, of the Harvard Medical School, has expressed the same view, adding that any man who prays sincerely will thereby open to himself powers which he might otherwise never be able to draw upon.

Indeed, at least one physician of note, Doctor Thomas Hyslop, the English psychiatrist, specifically recommends prayer in the treatment of insomnia. In an address delivered before the British Medical Association, Doctor Hyslop, speaking from the experience of many years, affirmed that he knew nothing so well calculated as prayer to pacify the mind and nerves, and bring about the mental passivity indispensable to the return of regular, natural sleep. By this, of course, Doctor Hyslop meant true prayer, the kind of prayer that Jonathan Edwards had in mind when he wrote:

"Resolved, never to count that a prayer, nor to let that pass as a prayer, nor that as a petition of a prayer, which is so made that I cannot hope the Lord will answer it."

By way of recapitulation, these are the facts which, in the light of recent clinical and experimental research, I would most strongly impress on all who would undertake the treatment of insomnia, or are themselves insomniacs:

That nearly all insomnia is curable, but that it is useless to try to cure any kind of insomnia by the administration of the so-called sleep-producing drugs.

That the only justification for the employment of these drugs is in cases where it is indispensable to cause immediate unconsciousness.

That the proper treatment for ninety to ninety-five per cent of insomnia is by psychological means alone, or psychological means plus hygienic and dietetic modifications of the daily life.

That since in most cases the persistence of insomnia is due to a false idea that one cannot sleep, the first effort should be to disprove this idea by putting the patient to sleep through hypnosis, hypnoidization, or suggestion in the fully waking state.

That in many cases the successful accomplishment of this first effort results in a complete and lasting cure.

But that, in order to be on the safe side, it is well to undertake a thorough "re-education" of the patient; pointing out to him the pitfalls he must avoid; enjoining any dietetic or hygienic precautions that may seem to be specially called for in his case; and, above all, instructing him in the principles of right thinking.

And, finally, that if he fail to respond to this treatment, and if he be proved free from organic complications that might account for a continuance of his insomnia, there is reason for suspecting the presence of a "subconscious complex," ascertain-

ment of which by psychological analysis will pave the way for his complete cure.

Almost always, in fine, there is hope for the insomniac. Almost always his is a distinctly curable malady. And almost always, in the last analysis, the cure rests with himself. Depending as his sleeplessness usually does on a state of mind, it is at bottom a question of inducing him to substitute a new and healthier mental state.

THE END

Judge Memorial
Salt La

INDEX

Bridge, N., 147 *n.*

Cabot, R. C., 212.
Cahill, B. J. S., 73–75.
Cannon, W. B., 169–172 and *n.*
Claperède, E., 9–10.
Coleridge, S. T., 67.
Conley, E., 83, 107.
Coriat, I. H., 21 and *n.*

Dieting, and nightmares, 120–121, 131–132; and somnambulism, 143; and sleeplessness, 149–152, 195–199.
Dreams, recurrent, 37–38, 51–53; reasoning in, 41; imagination in, 41–44, 67–75; rapidity of, 44–46; experimental production, 47; of flying, 48–50; physical factors in, 48–52; and disease, 51–53; analysis of, 50–65, 98–99, 103–113; of lost articles, 75–84; and ghosts, 83–89; premonitory, 91–95.
Dubois, P., on sleeplessness, 198–199, 201; and psychic re-education, 207–210.

Ellis, H., on dreams of flying, 48–50; and Freudian theory, 62; also mentioned, 40, 41.
Emotions, and bodily processes, 167–172.

Fisher, J. F., 186–187.
Freud, S., theory of dreams, 60–62 and *n*; also mentioned, 40, 124, 130.

Galen, 22.
Gerrish, F. H., 183–184 and *n.*
Gilbert, J. A., experiments of, 30–31, 157–159 and *n.*
Goodrich-Freer, Miss, 100–103, 106.
Greenwood, F., 94, 110.

Hammond, W. A., on nightmares, 132 and *n*; on insomnia, 146, 148; also mentioned, 3, 22, 147.

Hauser, C., 24–26.
Hilprecht, H. V., 68–72, 83, 105.
Hobby cure, 211.
Holt, H., 108 *n.*
Hypnoidization, description of, 11–12; and sleeplessness, 188–193, 201–205.
Hypnotism, and sleeplessness, 183–186, 188, 193, 214.
Hyslop, T., 212.

Insomnia. See Sleeplessness.

James, W., 77, 211.
Janet, P., 40, 140, 143 *n.*, 161–163.
Jastrow, J., 56.
Jefferson, T., 24.
Jones, F., 120–123.
Jones, F. J., 72.

Lyman, H., 124–125.

Manacéïne, M. de, on nature of sleep, 3; on excessive sleep, 31–32; on sleeping-drugs, 179; on bedroom temperature, 200–201.
Maury, A., 44–45.
McComb, S., 190–193.
Monotony, central fact in sleep, 19–20.
Mortimer-Granville, J., 179, 180 and *n.*

Nightmare, description, 115–120; treatment, 120, 131–133; causes, 121–124.
Night terrors, description, 124–125; causes, 125–130; prevention, 130.

Patrick, G. T. W., experiments of, 30–31, 157–159 and *n.*
Perception, subconscious, 99–104.
Prayer, 211–213.
Prince, M., 40, 62.

Richard, Abbé, 22.
Risser, A. S., 181–182.
Royce, J., 80, 82, 107.

Saleeby, C. W., 167.
Sawyer, J., 165–167 and *n.*
Schuyler, M., 75.
Sidgwick, E., 86, 103.
Sidgwick, H., 86.
Sidis, B., theory of sleep, 9–10; and hypnoidization, 11–12, 188–189; experiments in sleep, 12–19; and Freudian theory, 62.
Sleep, theories of, 3–4, 8–10, 19–23; anomalies of,

6–7; borderland of, 12, 157–160; experimental studies, 12–21; of childhood, 18–19, 23–27; interest and, 27–30, 173–176; time needed for, 30, 33–36; best temperature for, 200–201.
Sleeplessness, physical causes, 148–155, 173, 176; mental causes, 154–156, 160–167, 172–177; drugs and, 178–182; treatment by hypnotism, 183–186; treatment by waking suggestion, 186–187; treatment by hypnoidization, 188–193; educative treatment, 206–211; prayer and, 211–213.
Somnambulism, characteristics of, 133, 138–139; instances, 134–138; hysteria and, 139–143; treatment, 143–144.
Squires, J. L., 77–80, 107.
Stevenson, R. L., 67, 104.
Stewart, D., 24.
Subconscious, characteristics of the, 99–105.

Tartini, G., 67, 104.

Virchow, R., 27–29.

Walsh, J. J., on Virchow's case, 27–29; on sleeplessness, 150–152, 153–154, 195–198.
Warburton, Canon, 85, 112.
Williams, T. A., 126–129 and *n.*
Worry, 154–156, 164–168, 175–176.

Z., Mrs., 92, 95, 109.

MIND AND HEALTH SERIES

A series of medical handbooks written by eminent specialists and edited by H. ADDINGTON BRUCE and designed to present the results of recent research and clinical experience in a form intelligible to the lay public and medical profession.

Human Motives. By JAMES JACKSON PUTNAM, M.D., Professor Emeritus, Diseases of the Nervous System, Harvard University, Consulting Neurologist, Massachusetts General Hospital, Boston. 12mo. $1.00 *net*.

The Meaning of Dreams. By ISADOR H. CORIAT, M.D., First Assistant Visiting Physician, Nervous Diseases, Boston City Hospital. 12mo. $1.00 *net*.

Sleep and Sleeplessness. By H. ADDINGTON BRUCE, A.M. 12mo. $1.00 *net*.

Fear and Its Consequences. By BORIS SIDIS, M.D., Director of the Sidis Psychotherapeutic Institute, Portsmouth, New Hampshire.

Alcoholism, Its Causes and Its Cure. By SAMUEL MCCOMB, D.D., Director Emmanuel Alcoholic Clinic, Boston.

Insanity and Its Prevention. By M. S. GREGORY, M.D., Resident Alienist, Bellevue Hospital, New York.

Morbid Dreads. By A. A. BRILL, M.D., Chief of Clinic in Psychiatry and Clinical Assistant in Neurology, Columbia University.

The Influence of Joy. By GEORGE V. N. DEARBORN, M.D., Professor of Physiology, Tufts College Medical and Dental Schools.

LITTLE, BROWN, & CO., Publishers, BOSTON

CATHEDRAL HIGH SCHOOL
LIBRARY
SHELF No.
B

2946
613.79 Bruce, H. Addington,
B88 Sleep and Sleeplessne

Judge Memorial School Library

1. All students in the school are entitled to use the library and to draw books.

2. Reference books, such as encyclopaedias and dictionaries, etc., to be used only in the library.

3. Reserved books may be borrowed for one period, or at the close of school, and should be returned before the first class the following school day. If not returned on time, a fine of 5 cents will be charged.

4. All other books may be charged for two weeks and renewed for two additional weeks.

5. Two cents a day is charged for each book kept overtime, Sundays and holidays included.

6. Injury to books beyond reasonable wear and tear and all losses shall be paid for.

7. No books may be taken from the library without being charged.

Y0-CIN-096